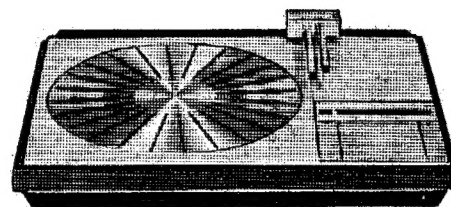




BEOGRAM 4000
TYPE 5215



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TECHNICAL DATA

| Motor | | BEOGRAM 4000 type 5215 |
|--|--------------------|--|
| Wow and Flutter | DIN 45 500, Page 3 | $< \pm 0.05 \%$ |
| | RMS | $< \pm 0.025 \%$ |
| Rumble | DIN 45 500, Page 3 | A |
| | | B |
| | | $> 42 \text{ dB}$ $> 65 \text{ dB}$ |
| Speed Control Range | | $> 6 \%$ |
| Motor Speed | | 315/435 rpm |
| Motor Suspension Resonant Frequency and Weight | | 3.5 Hz hor., 5 Hz vert. 4.5 kg |

| Pick-up | | |
|----------------------------------|---|--|
| Frequency Response | DIN 45 500, Page 3 | $\pm 5 \text{ dB}$ |
| | | $\pm 2 \text{ dB}$ |
| Channel Separation | DIN 45 500, Page 3 | 20 - 30,000 $\pm 2.5 \text{ dB}$ |
| | | 50 - 20,000 $\pm 1.5 \text{ dB}$ |
| Channel Matching | DIN 45 500, Page 3 | 1000 Hz |
| | | 500 - 6300 Hz |
| | | $> 25 \text{ dB}$ $> 20 \text{ dB}$ |
| Channel Matching | DIN 45 500, Page 3 | $< 1.5 \text{ dB}$ |
| Output Voltage and Load | | mV/cm/sec. music average |
| | | 0.6 mV/47 kohms 3 mV/47 kohms |
| Intermodulation | DIN 45 500, Page 3 | $< 1 \%$ |
| Compliance | Stated value $\times 10^{-6} \text{ cm/dyn.}$ | 30 |
| Stylus | | Elliptical naked diamond 5 X 17 μ |
| Recommended, Stylus Pressure | | 1 gram |
| Stylus Pressure Range | | 0 - 1.5 gram |
| Maximum Tracking Angle Error | With optimal adjustment | 0.04° |
| Arm Length, Suspension to Stylus | | 155 mm |
| Replacement Stylus Assembly | | Complete cartridge type 8905428 |

| Other Data | | |
|--------------|--|--|
| Power Supply | | 110, 130, 220, 240 volts 50 - 60 Hz 40 watts |
| Dimensions | | 10 X 49 X 38 cm |
| Weight | | 12 kg |

| | | |
|---------------------------------------|--|---|
| | | BEOGRAM 4000 Type 5215 |
| Speeds | | 33 - 45 rpm electronic section |
| Pickup-arm System | | Tangential |
| Pickup Cartridge | | SP 15 |
| Automatic Record-size Scanning | | Yes |
| Automatic Pickup- movement Control | | Yes |
| Automatic Speed Selection | | Yes |
| Cueing Control | | Electronic air- pressure damped |
| Skating Compensation | | Parallel tracking error angle compen- sated |
| Drive System | | Belt |
| Motor | | Synchronous elec- tronically controlled |
| Vernier Speed Adjustment | | Yes separately |
| Motor Suspension System | | Leaf springs and pendulums |
| Turntable, Diameter and Weight | | Zinc cast, diameter 300 mm 2.2 kg |
| Stroboscopic Scale | | Light indicator 33 and 45 rpm 50 and 60 Hz |
| Dust Cover | | Transparent, hinged and detachable |
| Meets DIN 45 500 Requirements | | Yes |

Subject to change without notice

DIAGRAM EXPLANATION

The electrical circuits are, concerning diagram, divided into two diagrams.

1. Control circuit (logic)
2. Power supply, indicator circuit, speed relais circuit, oscillator, lift circuit, motor control (servo), differential stop, detector circuit, etc.

The abbreviations used in connection with the common cable are the abbreviations of the functions in English. The outputs of the flip-flops are designated Q and \bar{Q} .

The stated voltages are positive in relation to chassis. They are measured with the detector arm above the ribs of the turntable with no record on and with a stationary pick-up arm.

ADSKILLELSE

DISASSEMBLY/ZERLEGUNG

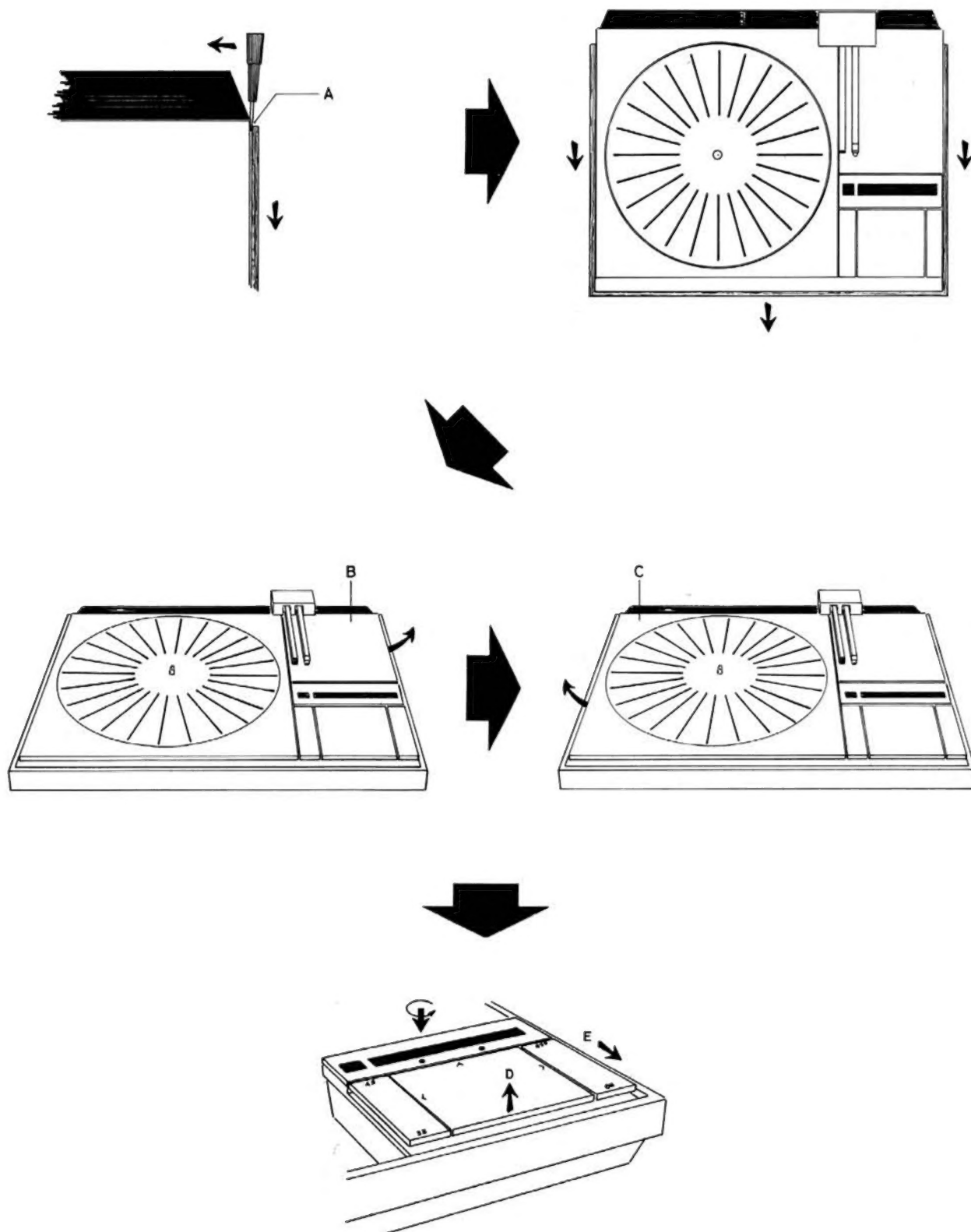
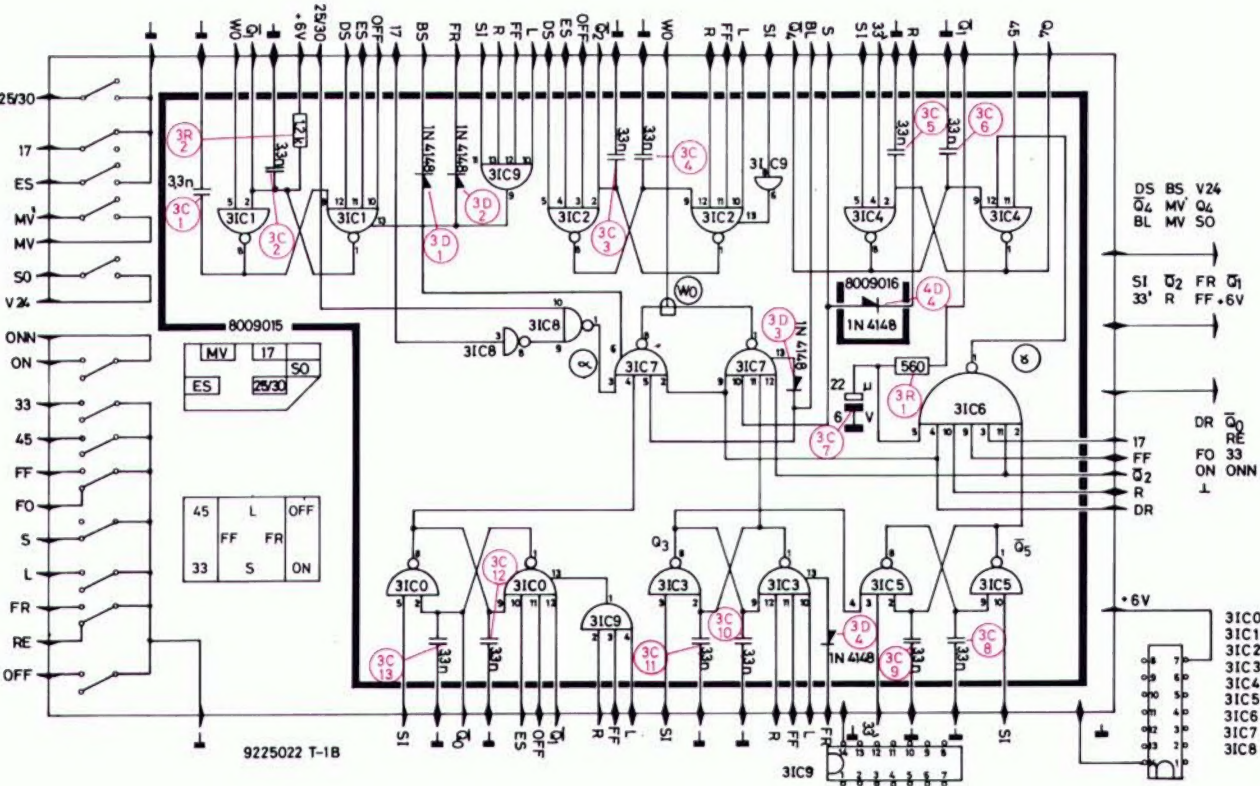
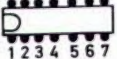
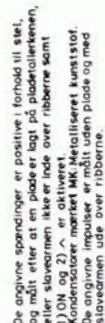


DIAGRAM 1



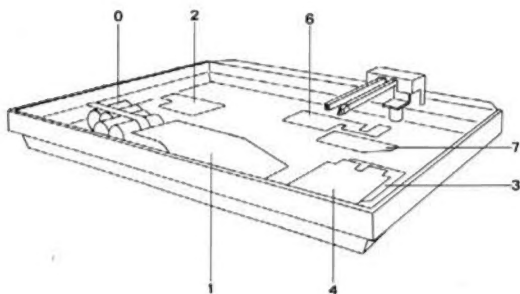
| | INDEX | <div>141312111098</div> <div></div> <div>1234567</div> |
|--------|---------|---|
| 3 IC 0 | 8340013 | FCH 131 |
| 3 IC 1 | | |
| 3 IC 2 | | |
| 3 IC 3 | | |
| 3 IC 4 | | |
| 3 IC 5 | | |
| 3 IC 6 | 8340012 | FCH 111 |
| 3 IC 7 | 8340013 | FCH 131 |
| 3 IC 8 | | |
| 3 IC 9 | 8340011 | FCY 101 |
| 4 IC 1 | 8340013 | FCH 131 |



Die aufgegebenen Spannungen sind positiv im Verhältnis zu Chassis, und sie sind gemessen, nachdem eine Platte auf den Plattenteiler gelegt ist, oder der Skolenarm nicht über die Rippen ist, sowie 1) ON und 2) aktiviert sind. Kondensatoren gekennzeichnet MK. Metallisierten Kunststoff.

The stated voltages are positive in proportion to the chossis and they have been measured after a record has been placed on the turntable, for the slave arm is not over the ribs and 1) ON and 2) \sim are activated.

| 1TR1 1TR2 1TR3 1TR4 1TR5 | 8320095 | BC 239 B BC 184 BK | BC 149 B | | BC 169 B BC 184 BL | BC 109 B | |
|--|---------|-----------------------|----------|----------|----------------------------------|--|----------|
| 1TR6 | 8320097 | BC 237 B BC 182 BK | BC 147 B | | BC 167 B BC 182 BL | BC 107 B | |
| 1TR7 | 8320161 | BC 261 B | | | BC 212 BL | BC 251 B | |
| 1TR8 1TR9 | 8320232 | | | | | BC 142 BC 144 | |
| 1TR10 | 8320095 | BC 239 B BC 184 BK | BC 149 B | | BC 169 B BC 184 BL | BC 109 B | |
| 1TR11 | 8320232 | | | | | BC 142 BC 144 | |
| 1TR12 1TR13 1TR14 1TR15 1TR16 1TR17 | 8320095 | BC 239 B BC 184 BK | BC 149 B | | BC 169 B BC 184 BL | BC 109 B | |
| 1TR18 | 8320161 | BC 261 B | | | BC 212 BL | BC 251 B | |
| 1TR19 1TR20 1TR21 1TR22 | 8320095 | BC 239 B BC 184 BK | BC 149 B | | BC 169 B BC 184 BL | BC 109 B | |
| 1TR23 1TR24 | 8320161 | BC 261 B | | | BC 212 BL | BC 251 B | |
| 1TR25 | 8320097 | BC 237 B BC 182 BK | BC 147 B | | BC 167 B BC 182 BL | BC 107 B | |
| 1TR26 | 8320161 | BC 261 B | | | BC 212 BL | BC 251 B | |
| 1TR27 | 8320097 | BC 237 B BC 182 BK | BC 147 B | | BC 167 B BC 182 BL | BC 107 B | |
| 1TR28/ 1TR29 1TR30/ 1TR31 | 8320135 | | | | | BC 143/ BC 144 BC 143/ BC 142 | |
| 1TR32 | 8320161 | BC 261 B | | | BC 212 BL | BC 251 B | |
| 1TR33 1TR34 2TR1 2TR2 2TR3 2TR4 2TR5 | 8320097 | BC 237 B BC 182 BK | BC 147 B | | BC 547B BC 167 B BC 182 BL | BC 107 B | |
| 2TR6 | 8320124 | | | | | BC 119 | |
| 2TR7 | 8320097 | BC 237 B BC 182 BK | BC 147 B | | BC 167 B BC 182 BL | BC 107 B | |
| 0TR1 | 8320103 | | | | | | 2 N 5034 |
| 0TR2 | 8320266 | | | TIP 31 | | | |
| 0TR3 | 8320265 | | | TIP 32 | | | |
| 0TR4 | 8320312 | | | TIP 41 A | | | |

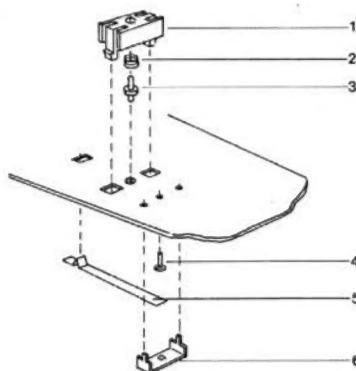


| Pos. | | Index |
|-----------|------------------------------|---------|
| 0 | | |
| | R | |
| 0R1 | 680, 5 %, 1 W | 5012011 |
| 0R2 | 27k, 10 %, 1/2 W | 5001047 |
| 0R3 | ORP 61 | 5210004 |
| 0R4 | ORP 61 | 5210004 |
| C | | |
| 0C1 | 2000 μ , 15 V | 4200265 |
| 0C2 | 2000 μ , 15 V | 4200265 |
| 0C3 | 3000 μ , 50 V | 4200258 |
| 0C4 | 3000 μ , 50 V | 4200258 |
| 0C5 | 47 n, 10 %, 250 V | 4130087 |
| 0C6 | 4000 μ , 25 V | 4200259 |
| 0C7 | 150 μ , 10 VRMS, BIPOLAR | 4200260 |
| D | | |
| 0D1 | B80C2200 | 8310020 |
| 0D2 | 24 V, 5 %, 1,3 W | 8300160 |
| TR | | |
| 0TR1 | | 8320103 |
| 0TR2 | | 8320266 |
| 0TR3 | | 8320265 |
| 0TR4 | | 8320312 |
| IL | | |
| 0IL1 | 6 V, 30 mA | 8230025 |
| 0IL2 | 6 V, 50 mA | 8230020 |
| 0IL3 | GL 90 | 8230038 |
| M | | |
| 0M1 | 6 V, AC | 8400015 |
| 0M2 | 12 V, DC | 8400014 |
| MS | | |
| 0MS1 | | 6810001 |
| PH | | |
| 0PH1 | BP 100 | 8760002 |

7 PC 8009010

| Pos. | Plac. | | Index |
|------|-------|-------------------|---------|
| | | R | |
| 7R1 | A1 | 8,2, TE, 5 %, 1 W | 5100082 |

| Pos. | 25/30 | 17 | ES | MV | SO |
|------|---------|---------|---------|---------|---------|
| 1 | 3152068 | 3152068 | 3152068 | 3152068 | 3152068 |
| 2 | | 2812041 | | | |
| 3 | 7500060 | 7500067 | 7500060 | 7500060 | 7500060 |
| 4 | | 2364024 | | | |
| 5 | 7500051 | 7500051 | 7500051 | 7500051 | 7500051 |
| 6 | 7500050 | | 7500050 | 7500050 | 7500050 |

**4** PC 8009016

| Pos. | Plac. | | Index |
|-----------|-------|------------------|---------|
| | | R | |
| 4R 1 | C2 | 12 k, 5 %, 1/8 W | 5010046 |
| | | VR | |
| 4VR1 | B3 | 1 k, LIN, 0,15 W | 5300079 |
| 4VR2 | C3 | 1 k, LIN, 0,15 W | 5300079 |
| D | | | |
| 4D 1 | B2 | 1N4148, SFD 184 | 8300058 |
| 4D 2 | B2 | 1N4148, SFD 184 | 8300058 |
| 4D 3 | A1 | 1N4148, SFD 184 | 8300058 |
| 4D 4 | B1 | 1N4148, SFD 184 | 8300058 |
| IC | | | |
| 4IC1 | B2 | FCH131 | 8340013 |

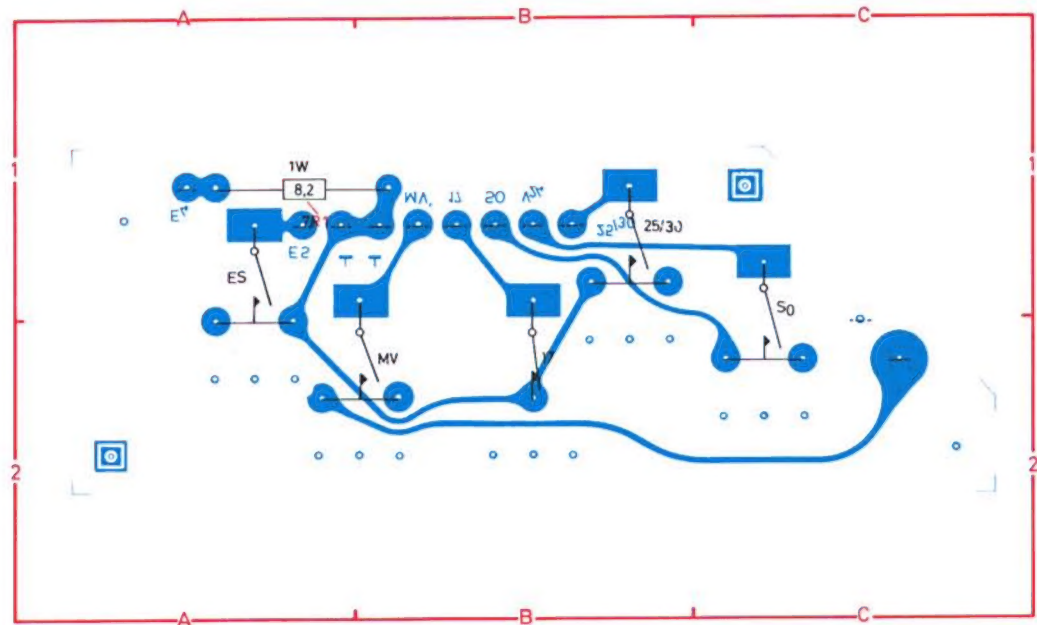
| Pos. | 33 | FF | 45 | S | L | ON | FR | OFF |
|------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1 | 3152068 | 3152068 | 3152068 | 3152068 | 3152068 | 3152068 | 3152068 | 3152068 |
| 2 | | | | | | | | |
| 3 | 7500059 | 7500066 | 7500059 | 7500059 | 7500059 | 7500059 | 7500066 | 7500059 |
| 4 | | 2364024 | | 2364024 | | | 2364024 | |
| 5 | 7500051 | 7500051 | 7500051 | 7500051 | 7500051 | 7500051 | 7500051 | 7500051 |
| 6 | 7500061 | 7500050 | 7500061 | | 7500061 | 7500061 | 7500050 | 7500061 |

BEOGRAM 4000, TYPE 5215

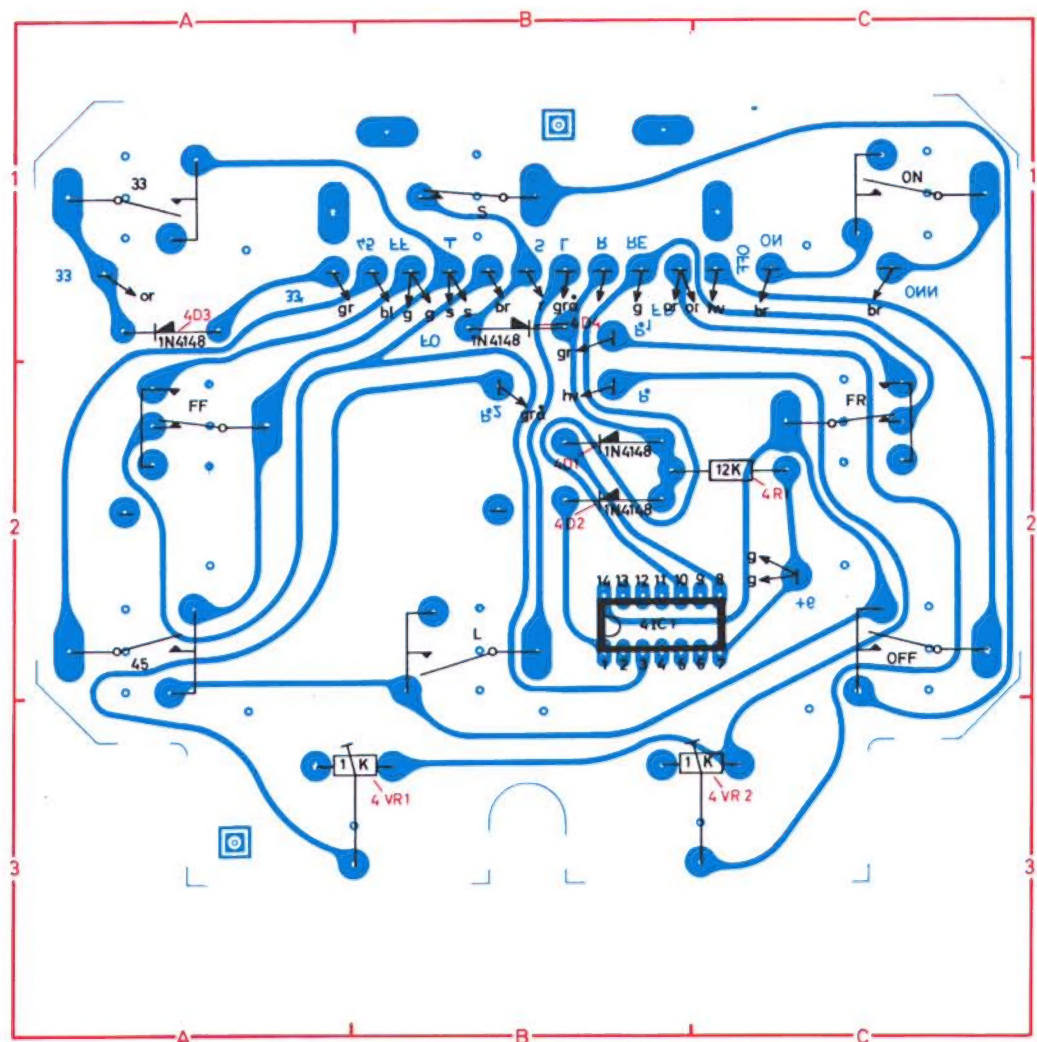
Correct on page 3-4

NB! Correct on pushbutton system
see page 6-4

7 PC 8009010

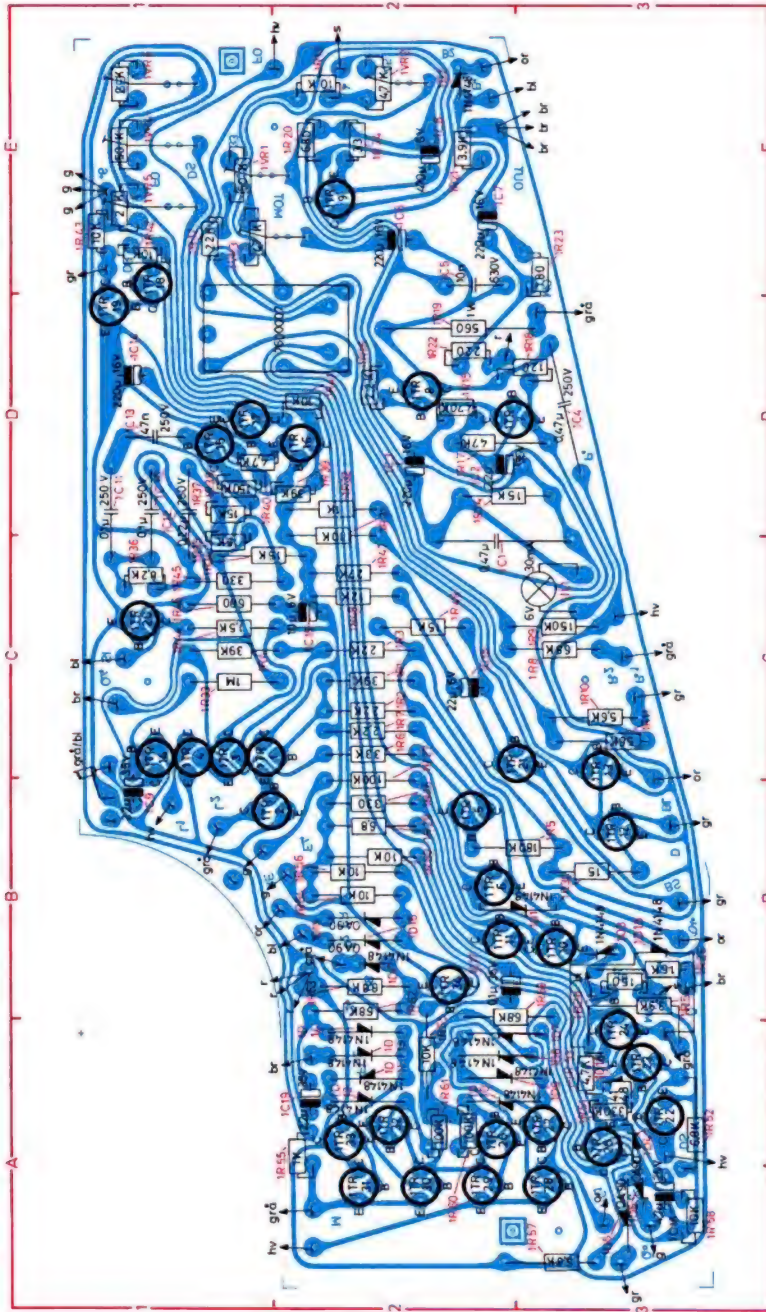


4 PC 8009016





SET FRA KOMPONENTSIDE / SEEN FROM COMPONENT SIDE / VON DER BAUTEILSEITE AUS GESEHEN

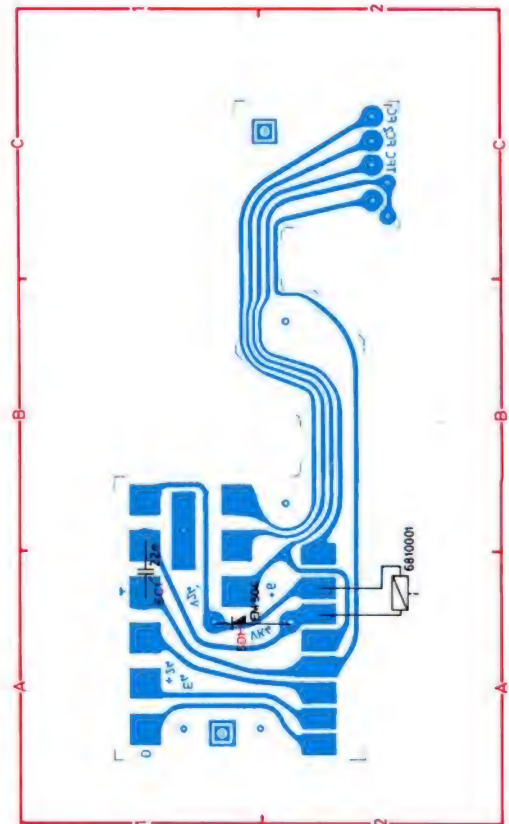
1 PC 8009012





2 PC 8009011

| Pos. | Plac. | R | Index |
|--|-------|--------------------|---------|
| 2R 1 | B2 | 1.5 M, 10 %, 1/8 W | 5010093 |
| 2R 2 | B2 | 100 k, 5 %, 1/8 W | 5010049 |
| 2R 3 | B2 | 39 k, 5 %, 1/8 W | 5010060 |
| 2R 4 | B2 | 100 k, 5 %, 1/8 W | 5010049 |
| 2R 5 | B2 | 10 k, 5 %, 1/8 W | 5010059 |
| 2R 6 | B1 | 270 k, 5 %, 1/8 W | 5010083 |
| 2R 7 | B1 | 39 k, 5 %, 1/8 W | 5010060 |
| 2R 8 | B2 | 27 k, 5 %, 1/8 W | 5010141 |
| 2R 9 | A2 | 5.6 k, 5 %, 1/8 W | 5010041 |
| 2R10 | A2 | 33 k, 5 %, 1/8 W | 5010075 |
| 2R11 | B2 | 3.9 k, 5 %, 1/8 W | 5010069 |
| 2R12 | A2 | 220, 5 %, 1/8 W | 5010092 |
| 2R13 | B2 | 3.9 k, 5 %, 1/8 W | 5010069 |
| 2R14 | B2 | 15 k, 5 %, 1/8 W | 5010053 |
| 2R15 | B2 | 5.6 k, 5 %, 1/8 W | 5010041 |
| 2R16 | A2 | 8.2 k, 5 %, 1/8 W | 5010154 |
| 2R17 | A2 | 3.9 k, 5 %, 1/8 W | 5010069 |
| 2R18 | A1 | 390, 5 %, 1/8 W | 5010070 |
| 2R19 | B1 | 22 k, 5 %, 1/8 W | 5010079 |
| 2R20 | B1 | 22 k, 5 %, 1/8 W | 5010046 |
| 2R21 | B1 | 39 k, 5 %, 1/8 W | 5010060 |
| 2R22 | B1 | 120, 5 %, 1/8 W | 5010128 |
| C  | | | |
| 2C 1 | B2 | 1 µ/35 V | 4201057 |
| 2C 2 | B1 | 1 µ/35 V | 4201057 |
| 2C 3 | B2 | 10n/40 V | 4010041 |
| 2C 4 | B2 | 10 n/40 V | 4010041 |
| D  | | | |
| 2D 1 | B2 | IN4148, SFD 184 | 8300058 |
| 2D 2 | B2 | IN4148, SFD 184 | 8300058 |
| 2D 3 | B2 | IN4148, SFD 184 | 8300058 |
| 2D 4 | B1 | 6.8 V | 8300154 |
| 2D 5 | B1 | B80C800 | 8300155 |

PC 8009019

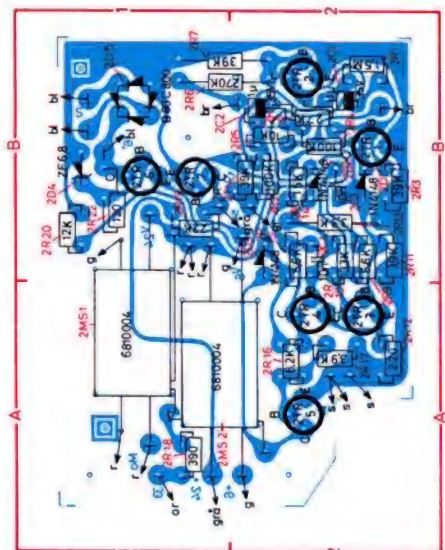


| | TR |  | |
|------|----|---|---------|
| 2TR1 | B2 | | 8320097 |
| 2TR2 | B2 | | 8320097 |
| 2TR3 | A2 | | 8320097 |
| 2TR4 | A2 | | 8320097 |
| 2TR5 | A2 | | 8320097 |
| 2TR6 | B1 | | 8320124 |
| 2TR7 | B1 | | 8320097 |








| | | |
|------|---|---------|
| MS |  | |
| 2MS1 | A1 | 6810004 |
| 2MS2 | A1 | 6810004 |
| | | |
| |  | |
| 2MS1 | A1 | 7600013 |
| 2MS2 | A1 | 7600013 |

| Pos. | Plac. | PC 8009019 | Index |
|------|-------|--|---------|
| 6C1 | A1 | C $\text{---} \parallel \text{---}$ 22n, 10 %, 400 V | 4130096 |
| 6D1 | A1 | D $\text{---} \text{---} \text{---} \text{---} \text{---}$ | 8300102 |

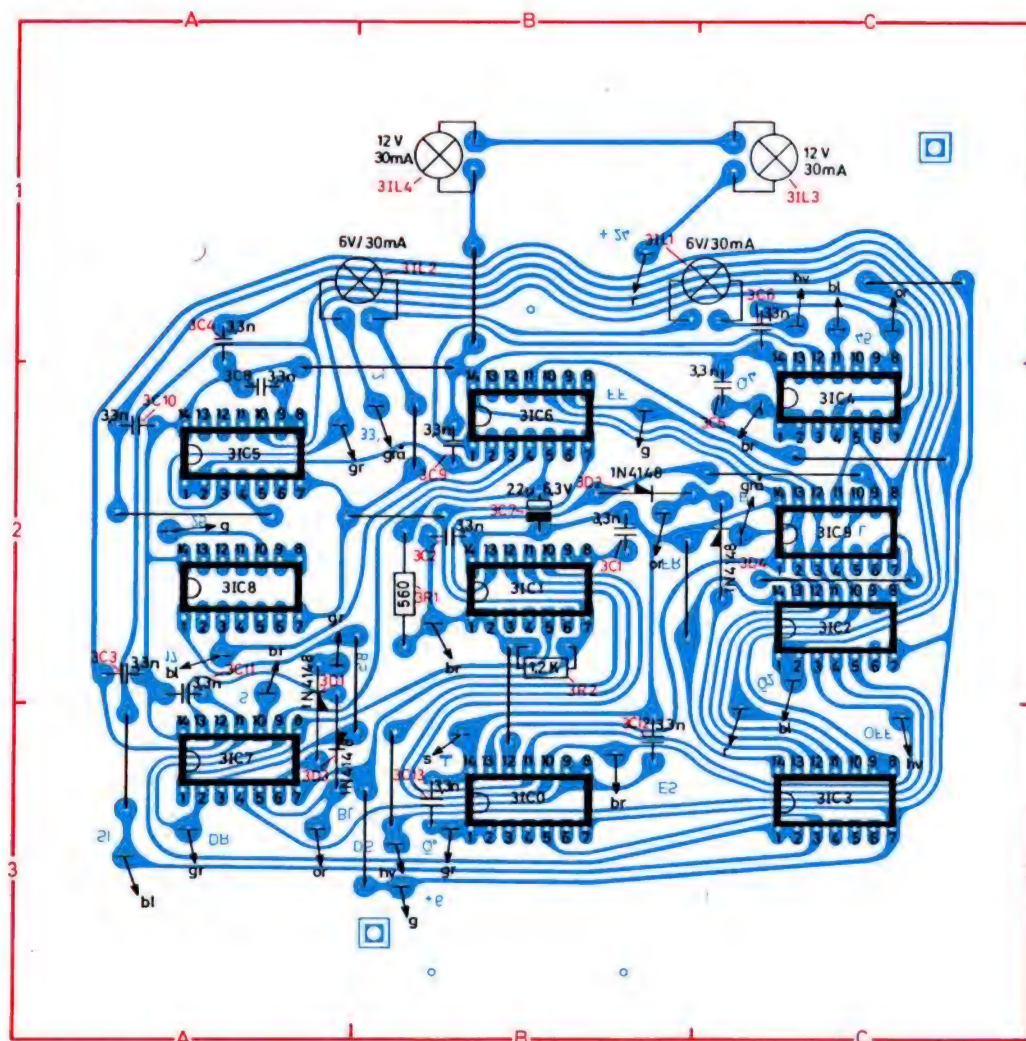
2 PC 8009011



1 PC 8009012

| Pos. | Plac. | Index | | | | |
|-------|--|---------------------|---------|--|--|--|
| | R  | | | | | |
| 1R1 | C2 | 39 k, 5 %, 1/8 W | 5010060 | | | |
| 1R2 | C2 | 22 k, 5 %, 1/8 W | 5010079 | | | |
| 1R3 | C2 | 22 k, 5 %, 1/8 W | 5010079 | | | |
| 1R4 | C1 | 39 k, 5 %, 1/8 W | 5010060 | | | |
| 1R5 | B3 | 180 k, 5 %, 1/8 W | 5010072 | | | |
| 1R6 | C2 | 33 k, 5 %, 1/8 W | 5010075 | | | |
| 1R7 | C2 | 2,2 k, 5 %, 1/8 W | 5010064 | | | |
| 1R8 | C3 | 6,8 k, 5 %, 1/8 W | 5010052 | | | |
| 1R9 | C3 | 150 k, 5 %, 1/8 W | 5010063 | | | |
| 1R10 | C3 | 5,6 k, 5 %, 1/8 W | 5010041 | | | |
| 1R11 | C3 | 56k, 5 %, 1/8 W | 5010061 | | | |
| 1R12 | E1 | 22 k, 5 %, 1/8 W | 5010079 | | | |
| 1R13 | E2 | 10 k, 5 %, 1/8 W | 5010059 | | | |
| 1R14 | D2 | 15 k, 5 %, 1/8 W | 5010053 | | | |
| 1R15 | D2 | 470 k, 5 %, 1/8 W | 5010077 | | | |
| 1R16 | D2 | 2,2 k, 5 %, 1/8 W | 5010064 | | | |
| 1R17 | D2 | 47 k, 5 %, 1/8 W | 5010045 | | | |
| 1R18 | D3 | 120, 5 %, 1/8 W | 5010128 | | | |
| 1R19 | D2 | 560, 10 %, 1 W | 5002022 | | | |
| 1R20 | E2 | 680, 5 %, 1/8 W | 5010144 | | | |
| 1R21 | E2 | 3,9 k, 5 %, 1/8 W | 5010069 | | | |
| 1R22 | D2 | 220, 5 %, 1/8 W | 5010092 | | | |
| 1R23 | E3 | 180, 5 %, 1/8 W | 5010362 | | | |
| 1R24 | E2 | 33, 5 %, 1/8 W | 5010253 | | | |
| 1R25 | B3 | 15 k, 5 %, 1/8 W | 5010053 | | | |
| 1R26 | B2 | 330, 5 %, 1/8 W | 5010044 | | | |
| 1R27 | C2 | 100 k, 5 %, 1/8 W | 5010049 | | | |
| 1R28 | B3 | 150, 5 %, 1/8 W | 5010057 | | | |
| 1R29 | B2 | 6,8, 10 %, 1/2 W | 5000111 | | | |
| 1R30 | B3 | 15, 5 %, 1/8 W | 5010468 | | | |
| 1R31 | D2 | 10 k, 5 %, 1/8 W | 5010059 | | | |
| 1R32 | D2 | 1 k, 5 %, 1/8 W | 5010040 | | | |
| 1R33 | C1 | 1 M, 5 %, 1/8 W | 5010054 | | | |
| 1R34 | C1 | 15 k, 5 %, 1/8 W | 5010053 | | | |
| 1R35 | C1 | 15 k, 5 %, 1/8 W | 5010053 | | | |
| 1R36 | C1 | 8,2 k, 5 %, 1/8 W | 5010154 | | | |
| 1R37 | D1 | 15 k, 5 %, 1/8 W | 5010053 | | | |
| 1R38 | D1 | 150 k, 5 %, 1/8 W | 5010063 | | | |
| 1R39 | D2 | 39 k, 5 %, 1/8 W | 5010060 | | | |
| 1R40 | D1 | 4,7 k, 5 %, 1/8 W | 5010048 | | | |
| 1R41 | D2 | 10 k, 5 %, 1/8 W | 5010059 | | | |
| 1R42 | E1 | 10 k, 5 %, 1/8 W | 5010059 | | | |
| 1R43 | E1 | 10 k, 5 %, 1/8 W | 5010059 | | | |
| 1R44 | C1 | 1,5 k, 5 %, 1/8 W | 5010247 | | | |
| 1R45 | C1 | 330, 5 %, 1/8 W | 5010044 | | | |
| 1R46 | C1 | 680, 5 %, 1/8 W | 5010144 | | | |
| 1R47 | C2 | 27 k, 5 %, 1/8 W | 5010141 | | | |
| 1R48 | C2 | 12 k, 5 %, 1/8 W | 5010046 | | | |
| 1R49 | C2 | 15 k, 5 %, 1/8 W | 5010053 | | | |
| 1R50 | B2 | 10 k, 5 %, 1/8 W | 5010059 | | | |
| 1R51 | A3 | 330 k, 5 %, 1/8 W | 5010117 | | | |
| 1R52 | A3 | 6,8 k, 5 %, 1/8 W | 5010052 | | | |
| 1R53 | A3 | 4,7 k, 5 %, 1/8 W | 5010048 | | | |
| 1R54 | B3 | 3,9 k, 5 %, 1/8 W | 5010069 | | | |
| 1R55 | A2 | 1 k, 5 %, 1/8 W | 5010040 | | | |
| 1R56 | B2 | 10 k, 5 %, 1/8 W | 5010059 | | | |
| 1R57 | A3 | 6,8 k, 5 %, 1/8 W | 5010052 | | | |
| 1R58 | A3 | 10 k, 5 %, 1/8 W | 5010059 | | | |
| 1R59 | B3 | 68 k, 5 %, 1/8 W | 5010062 | | | |
| 1R60 | A2 | 100 k, 5 %, 1/8 W | 5010049 | | | |
| 1R61 | A2 | 100 k, 5 %, 1/8 W | 5010049 | | | |
| 1R62 | B2 | 68 k, 5 %, 1/8 W | 5010062 | | | |
| 1R63 | B2 | 6,8 k, 5 %, 1/8 W | 5010052 | | | |
| 1R64 | B2 | 10 k, 5 %, 1/8 W | 5010059 | | | |
| 1R65 | A2 | 10 k, 5 %, 1/8 W | 5010059 | | | |
| | VR  | | | | | |
| 1VR1 | E1 | 50 k, 20 % | 5370061 | | | |
| 1VR2 | E2 | 4,7 k, 20 % | 5370058 | | | |
| 1VR3 | E1 | 4,7 k, 20 % | 5370058 | | | |
| 1VR4 | E1 | 50 k, 20 % | 5370061 | | | |
| 1VR5 | E1 | 2 k, 20 % | 5370006 | | | |
| 1VR6 | E1 | 2k, 20 % | 5370006 | | | |
| | C  | | | | | |
| 1C 1 | C2 | 0,47 µ, 250 V, 10 % | 4130029 | | | |
| 1C 2 | D2 | 2,2 µ, 35 V | 4201069 | | | |
| 1C 3 | D2 | 220 µ, 16 V | 4200097 | | | |
| 1C 4 | D3 | 0,47 µ, 250 V, 10 % | 4130029 | | | |
| 1C 5 | E2 | 10 n, 250 V, 20 % | 4130081 | | | |
| 1C 6 | E2 | 220 µ, 16 V | 4200097 | | | |
| 1C 7 | E2 | 220 µ, 16 V | 4200097 | | | |
| 1C 8 | E2 | 470 µ, 6 V | 4200109 | | | |
| 1C 9 | B1 | 2,2 µ, 35 V | 4201069 | | | |
| 1C10 | D1 | 0,1 µ, 250 V, 20 % | 4130075 | | | |
| 1C11 | D1 | 0,1 µ, 250 V, 20 % | 4130075 | | | |
| 1C12 | D1 | 0,22 µ, 250 V, 20 % | 4130082 | | | |
| 1C13 | D1 | 47 n, 250 V, 20 % | 4130078 | | | |
| 1C14 | D1 | 220 µ, 16 V | 4200097 | | | |
| 1C15 | C2 | 10 µ, 6 V | 4200101 | | | |
| 1C16 | C2 | 22 µ, 6 V | 4200218 | | | |
| 1C17 | B2 | 0,1 µ, 35 V | 4200169 | | | |
| 1C18 | A3 | 4,7 µ, 25 V | 4200108 | | | |
| 1C19 | A2 | 2,2 µ, 35 V | 4201069 | | | |
| | RL  | | | | | |
| 1RL1 | D1 | 24 V | 7600007 | | | |
| | IL  | | | | | |
| 1IL1 | C3 | 6 V, 30 mA | 8230041 | | | |
| | D  | | | | | |
| 1D 1 | B3 | 1N4148, SFD 184 | 8300058 | | | |
| 1D 2 | E2 | 1N4148, SFD 184 | 8300058 | | | |
| 1D 3 | B3 | 1N4148, SFD 184 | 8300058 | | | |
| 1D 4 | A3 | OA90 | 8300009 | | | |
| 1D 5 | A3 | OA90 | 8300009 | | | |
| 1D 6 | A3 | OA90 | 8300009 | | | |
| 1D 7 | A3 | 1N4148, SFD 184 | 8300058 | | | |
| 1D 8 | A3 | 1N4148, SFD 184 | 8300058 | | | |
| 1D 9 | A3 | 1N4148, SFD 184 | 8300058 | | | |
| 1D10 | A2 | 1N4148, SFD 184 | 8300058 | | | |
| 1D11 | A2 | 1N4148, SFD 184 | 8300058 | | | |
| 1D12 | A2 | 1N4148, SFD 184 | 8300058 | | | |
| 1D13 | A2 | 1N4148, SFD 184 | 8300058 | | | |
| 1D14 | A2 | 1N4148, SFD 184 | 8300058 | | | |
| 1D15 | B2 | OA90 | 8300009 | | | |
| 1D16 | B2 | OA90 | 8300009 | | | |
| 1D17 | B2 | 1N4148, SFD 184 | 8300058 | | | |
| 1D18 | A3 | 1N4148, SFD 184 | 8300058 | | | |
| 1D19 | B3 | 1N4148, SFD 184 | 8300058 | | | |
| | TR  | | | | | |
| 1TR 1 | C1 | 8320095 | | | | |
| 1TR 2 | B1 | 8320095 | | | | |
| 1TR 3 | C1 | 8320095 | | | | |
| 1TR 4 | C1 | 8320095 | | | | |
| 1TR 5 | B2 | 8320095 | | | | |
| 1TR 6 | B2 | 8320097 | | | | |
| 1TR 7 | D2 | 8320161 | | | | |
| 1TR 8 | D2 | 8320232 | | | | |
| 1TR 9 | E2 | 8320232 | | | | |
| 1TR10 | B3 | 8320095 | | | | |

3 PC 8009015



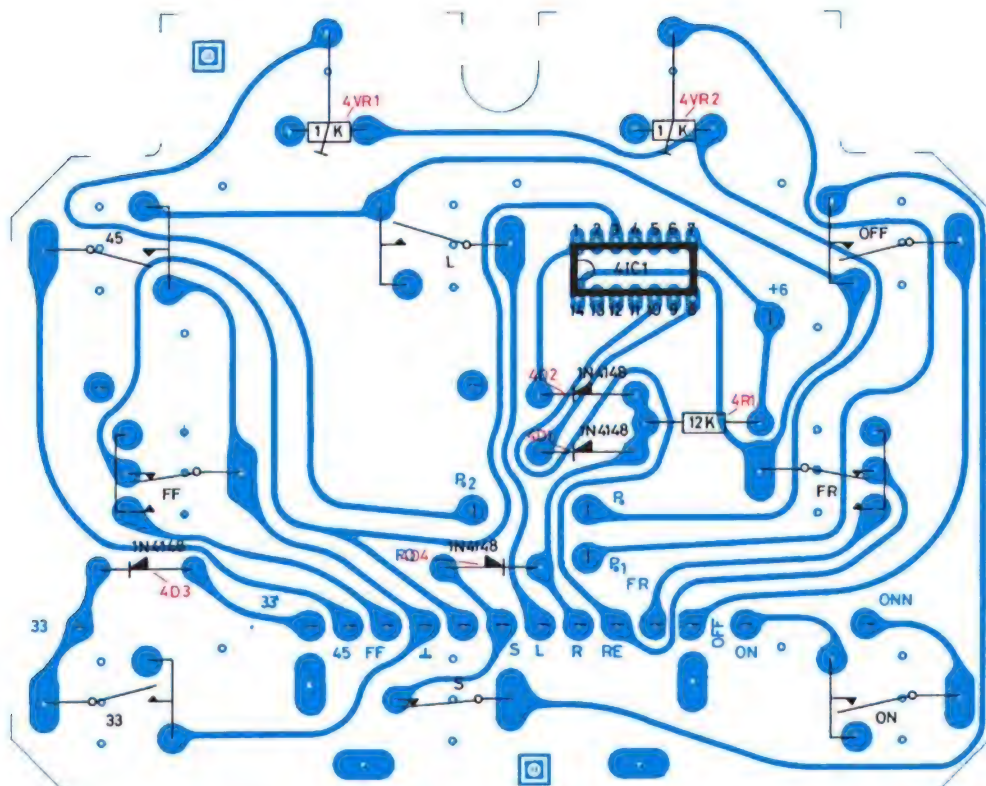
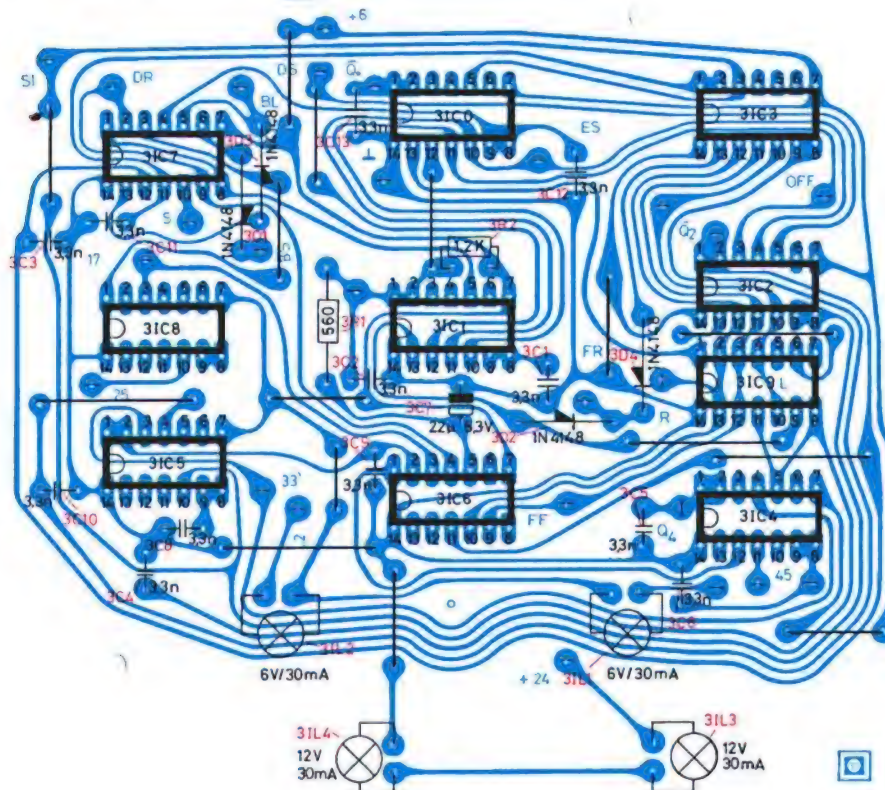
SET FRA KOMPONENTSIDE / SEEN FROM COMPONENT SIDE / VON DER BAUTEILSEITE AUS GEGEHEN

3 PC 8009015

| Pos. | Plac. | Index | IC | | |
|------|-------|--------------------|---------|------|------------------------|
| | R | | | | |
| 3R 1 | B2 | 560, 5 %, 1/8 W | 5010067 | 3IC0 | B3 FCH131 8340013 |
| 3R 2 | B2 | 1,2 k, 5 %, 1/8 W | 5010153 | 3IC1 | B2 FCH131 8340013 |
| | C | | | 3IC2 | C2 FCH131 8340013 |
| 3C 1 | B2 | 3,3 n, 100 V, 10 % | 4011025 | 3IC3 | C3 FCH131 8340013 |
| 3C 2 | B2 | 3,3 n, 100 V, 10 % | 4011025 | 3IC4 | C2 FCH131 8340013 |
| 3C 3 | A2 | 3,3 n, 100 V, 10 % | 4011025 | 3IC5 | A2 FCH131 8340013 |
| 3C 4 | A1 | 3,3 n, 100 V, 10 % | 4011025 | 3IC6 | B2 FCH111 8340012 |
| 3C 5 | C2 | 3,3 n, 100 V, 10 % | 4011025 | 3IC7 | A3 FCH131 8340013 |
| 3C 6 | C1 | 3,3 n, 100 V, 10 % | 4011025 | 3IC8 | A2 FCH131 8340013 |
| 3C 7 | B2 | 22 μ/6,3 V | 4200218 | 3IC9 | C2 FCY101 8940011 |
| 3C 8 | A2 | 3,3 n, 100 V, 10 % | 4011025 | | |
| 3C 9 | B2 | 3,3 n, 100 V, 10 % | 4011025 | 3IL1 | B1 6 V, 30 mA 8230041 |
| 3C10 | A2 | 3,3 n, 100 V, 10 % | 4011025 | 3IL2 | B1 6 V, 30 mA 8230041 |
| 3C11 | A2 | 3,3 n, 100 V, 10 % | 4011025 | 3IL3 | C1 12 V, 30 mA 8230040 |
| 3C12 | B3 | 3,3 n, 100 V, 10 % | 4011025 | 2IL4 | B1 12 V, 30 mA 8230040 |
| 3C13 | B3 | 3,3 n, 100 V, 10 % | 4011025 | | |
| | D | | | | |
| 3D 1 | A2 | 1N4148, SFD 184 | 8300058 | | |
| 3D 2 | B2 | 1N4148, SFD 184 | 8300058 | | |
| 3D 3 | A3 | 1N4148, SFD 184 | 8300058 | | |
| 3D 4 | C2 | 1N4148, SFD 184 | 8300058 | | |

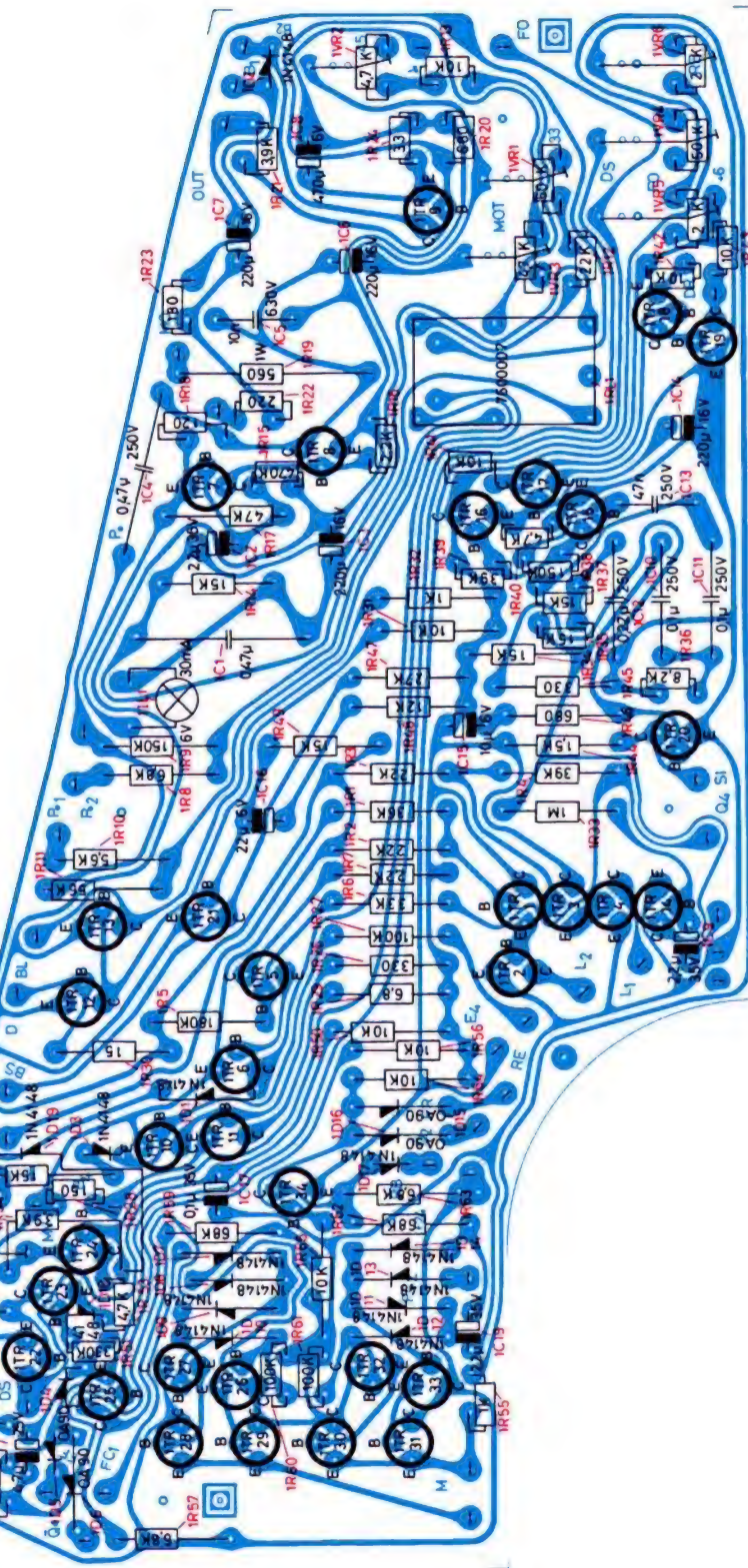
BEOGRAM 4000, TYPE 5215
Correct on page 3-8

| | | | |
|------|----|----------|---------|
| 3IL3 | C1 | 24V/25mA | 8230044 |
| 3IL4 | B1 | 24V/25mA | 8230044 |



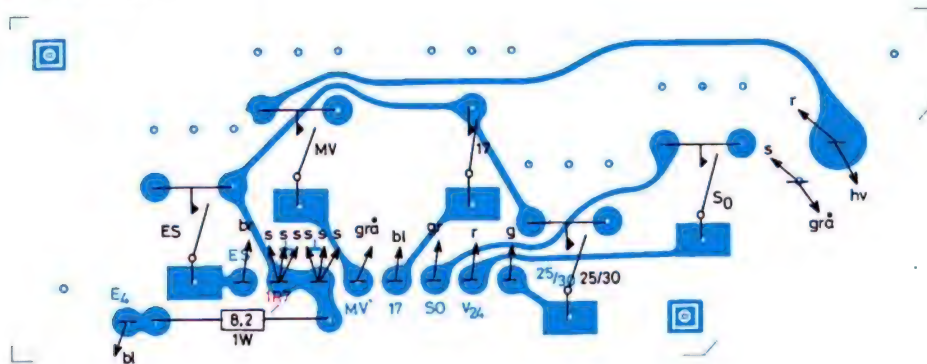
SET FRA PRINTSIDE / SEEN FROM CONDUCTOR SIDE / VON DER LEITERSEITE AUS GESEHEN

1 PC 8009012

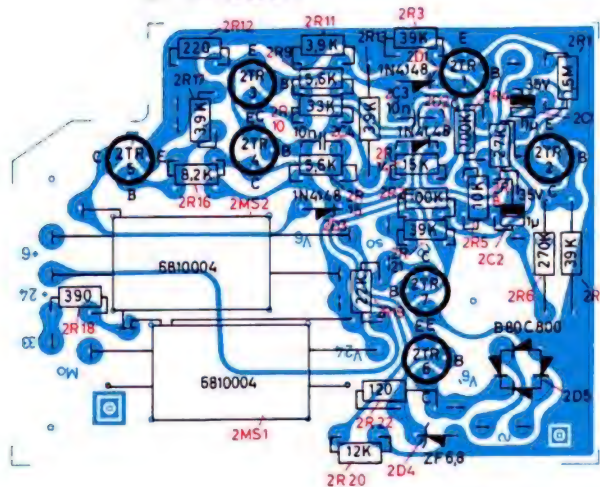


A PRINTSIDE / SEEN FROM CONDUCTOR SIDE / VON DER LEITERSEITE AUS GEGEHEN

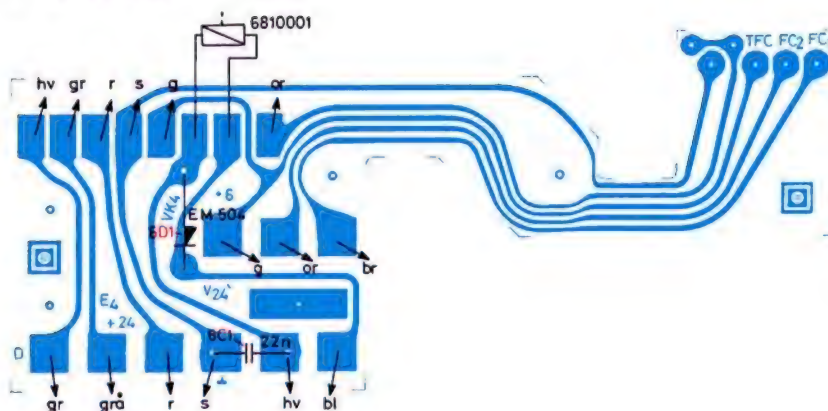
7 PC 8009010



2 PC 8009011



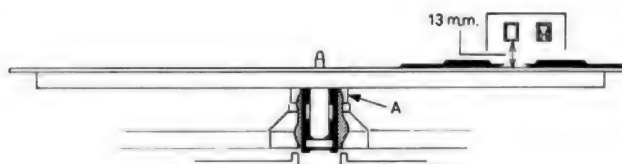
6 PC 8009019



SET FRA PRINTSIDE / SEEN FROM CONDUCTOR SIDE / VON DER LEITERSEITE AUS GESEHEN

MECHANICAL ADJUSTMENTS

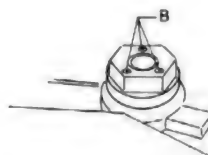
Height Adjustment of Turntable



Loosen nut A at the turntable bearing and adjust the height of the bearing so that the spacing between the turntable and the detector arm is 13 mm.

Tighten nut A lightly.

Vertical Adjustment of Turntable Bearing



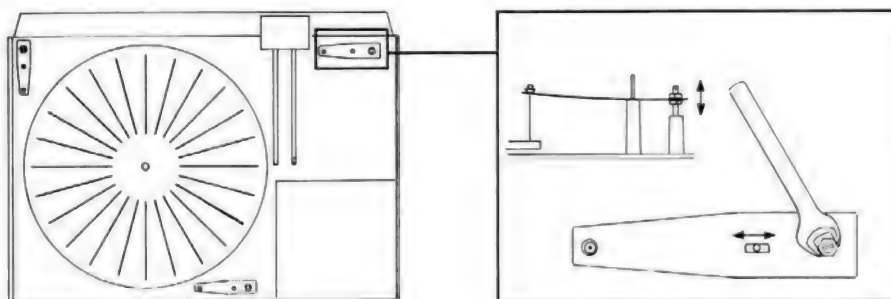
Turn the transit screws to lock the floating chassis.

With screws B adjust the turntable bearing so that it is at right angles to the chassis – in other words so that the turntable surface is parallel with the cover plate.

Check height adjustment (13 mm) at both the rim and centre of the turntable.

Height and Side Adjustment of Chassis

Loosen transit screws so that chassis floats freely.



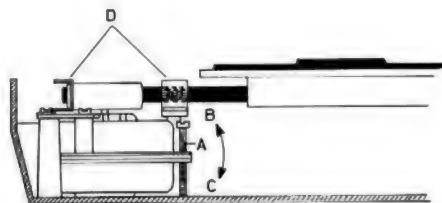
With the suspension springs adjust the chassis so that the turntable is flush with the cover plate and so that the chassis is centered with respect to the transit screws.



Also slide the springs backwards and forwards to locate the turntable centrally in the cutout in the cover plate.

To make this adjustment loosen the top nuts and thereafter adjust the screw to the desired height and slide the springs to the desired position. Thereafter retighten the nuts.

Adjustment of Belt Drive



Adjust the belt so that it runs on the middle of the pulley and the belt face on the turntable.

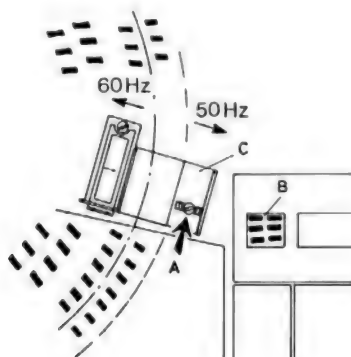
To shift the belt farther down on the pulley, turn screw A so that the motor tilts in the direction of arrow B.

To shift the belt farther upwards, loosen screw A and bend the motor suspension in the direction of arrow C. Thereafter tighten screw A until the belt runs on the middle of the pulley.

Adjust belt guides D so that they prevent the belt from running upwards or downwards off the pulley and so that they do not touch the belt during operation.

NOTE: The belt must be placed so that its ground (rough) side faces the pulley and turntable.

Adjustment of Stroboscope



Loosen screw A.

Adjust bracket C with the mirror so that the stroboscope image is located in the middle of the field of vision.

Tighten screw A.

NOTE: The two outer rows are for 50 Hz and the two inner ones are for 60 Hz.

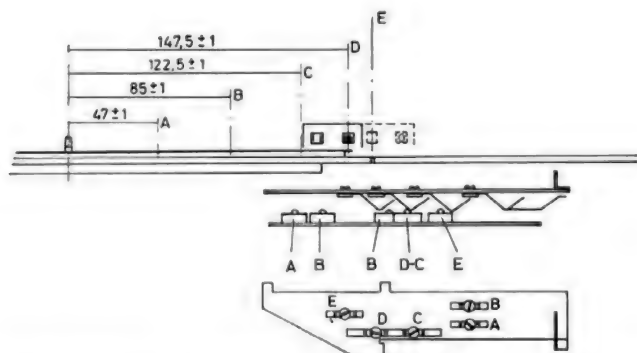
Adjustment of Slide Contact Springs

Height



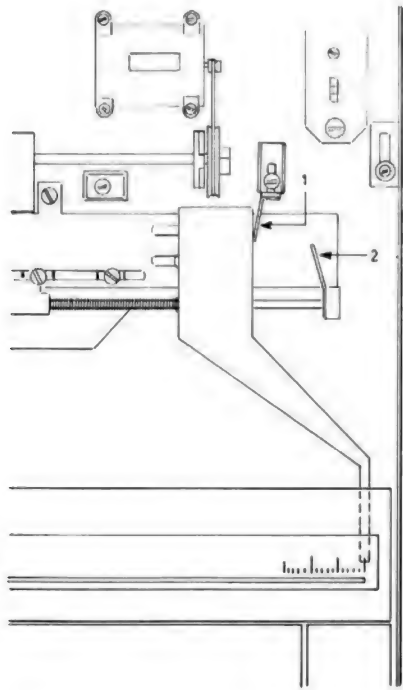
Adjust all contact springs so that they only just actuate the contacts but also so that they do not jam against the contact pins, thus obstructing the slide transport.

Placement



Adjust the horizontal placement of the springs so that, during slide transport, they will actuate their respective contacts when the pickup is spaced from the middle of the record spindle by the amount indicated in the sketch.

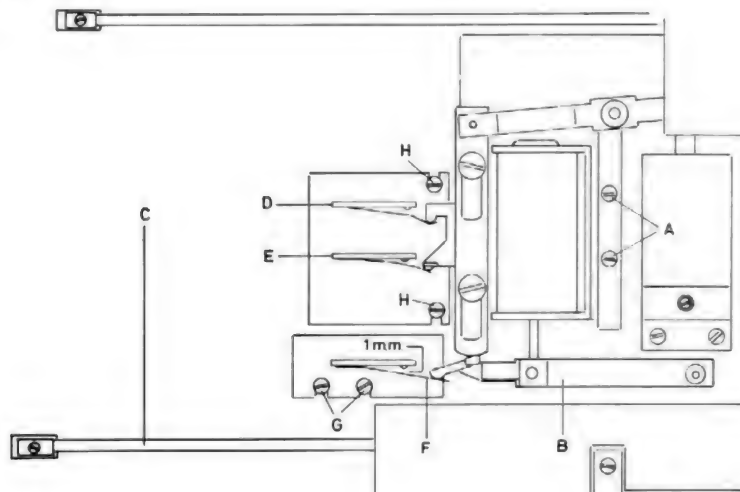
To adjust, loosen the screws holding the single spring and slide it in the oblong hole.

Adjustment of Dial Pointer**Zero Adjustment**

Zero adjustment is performed by bending the tag 1 with the slide in its extreme right-hand position.

Start Adjustment

Adjust (bend) angle 2 so that the pointer begins to move away from "0" when the pickup lowers into the first groove of a 30 cm record.

Adjustment of Magnet Coil System**Magnet Coil**

Loosen screws A.

Slide the magnet coil to the place where the arm B is parallel with tie-bar C when the magnet coil armature has been pulled home.

Tighten screws A.

Contacts F

Contacts F, which cut in the power limiter circuit, should be adjusted so that they are spaced 0.5 - 1, with the magnet coil armature pulled home.

To adjust, loosen screws G.

Contacts D and E

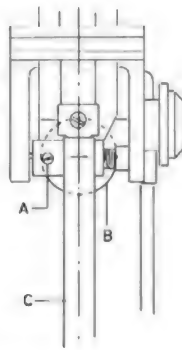
Contacts F and G should be adjusted so that the contact functions are not performed until the pickup stylus is in contact with the record but on the other hand as quickly as possible after the stylus hits the record.

Moreover, contacts E, of the duplex type, should be adjusted so that the upper contacts break first and the lower ones immediately afterwards.

Contacts D turn on the servo mechanism. Contacts E connect the pickup signal leads together and short-circuit them.

Adjustment of Pickup Arm System

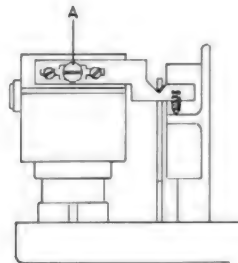
Horizontal Placement (Fixing)



Place the pickup arm in a bearing frame so that the centre line C of the pickup arm is located on the centre line of the shaft B with an accuracy of ± 0.2 mm.

To make the adjustment, loosen screw A and slide the pickup arm in one direction or the other, thereafter retightening screw A.

Static Balance

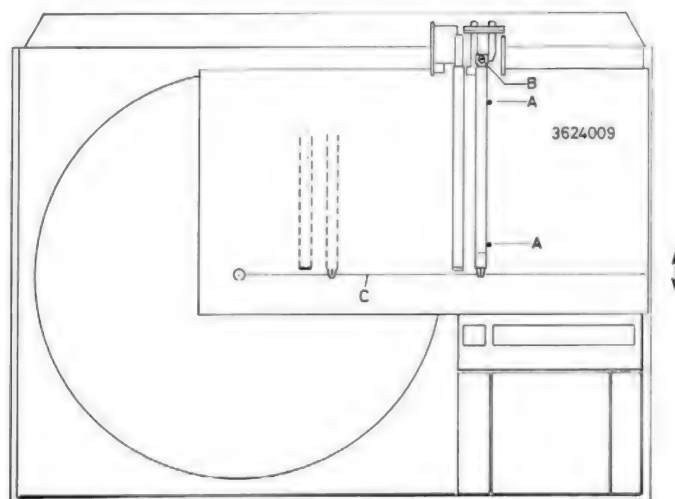


Set stylus adjustment to "0".

Release pickup arm from lifting arm.

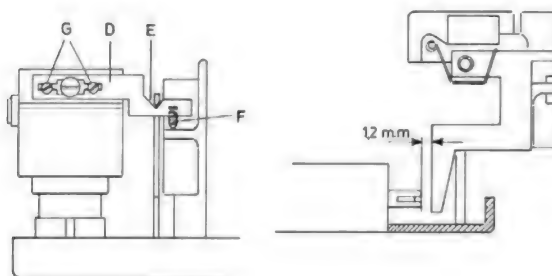
Adjust screw A until balance is obtained in the system.

Length, Height and Parallel Adjustment



Adjust stylus force to 1 gr. Take off turntable. Run pickup arm in towards the centre.

Mount tool 3624009 on the Beogram 4000 as shown by sketch. Run pickup arm out close to pins A. Lower pickup on to tool. Slide tool backwards or forwards so that stylus drops into groove C. Keep tool fixed in this position. Raise pickup and run it towards the centre. Lower pickup into the position shown in the sketch. If the stylus hits outside groove C, adjust screw B so that the deviation in question is halved. Run the pickup arm all the way out close to pins A. At this point lower the pickup and slide tool 3624009 so that the stylus is exactly in groove C. Raise the arm and now check if the arm is equally spaced from the pins A. Also make sure that the lifting arm rests in the bottom of the V-notch E on the arm D.



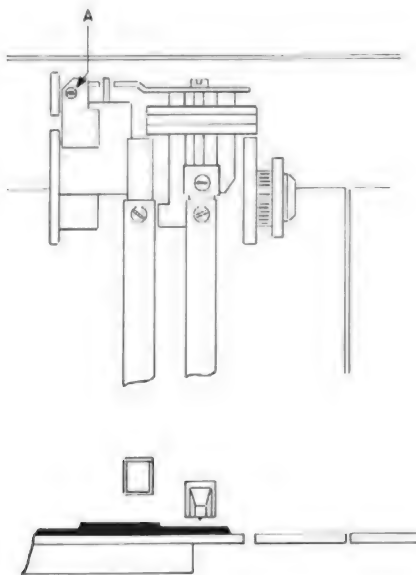
If the pickup arm is not parallel with the line between pins A, loosen screws G and slide arm D backwards or forwards until parallelism has been accomplished (the lifting arm must be in the bottom of the V-notch during this adjustment).

NOTE: Length adjustment of the pickup arm should be checked after adjustment of the arm D.

Adjust screw F so that the arm is horizontal (reference to detector arm) and so that the lifting arm is spaced $1.2 \text{ mm} \pm 0.3 \text{ mm}$ from the damper cylinder as shown by the sketch. It may be necessary to tilt the arm D when making this adjustment.

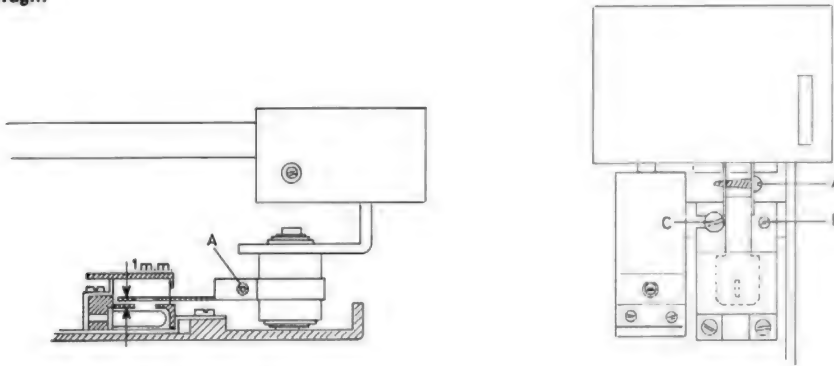
NOTE: If the arm D is to be tilted, the parallel adjustment of the pickup arm must be checked and repeated if necessary. Check static balance and readjust if necessary.

Lowering (Depth) Adjustment



Adjust screw A with the pickup arm lowered so that the stylus clears the low portions of the turntable ribs (by approx. 0.5 mm).

Adjustment of Diaphragm



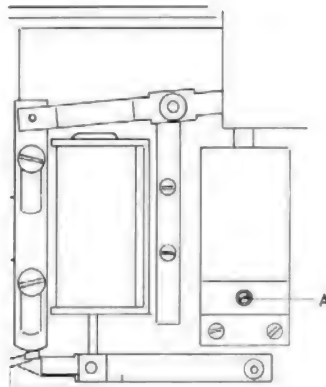
The diaphragm is adjusted by loosening screw A and turning and sliding it on the arm bearing.

Adjustment should be made so that the 1 mm spacing shown is complied with and so that the diaphragm arm becomes parallel with the pickup arm.

Fine adjustment of the diaphragm is performed with a record placed on the turntable and the drive belt removed.

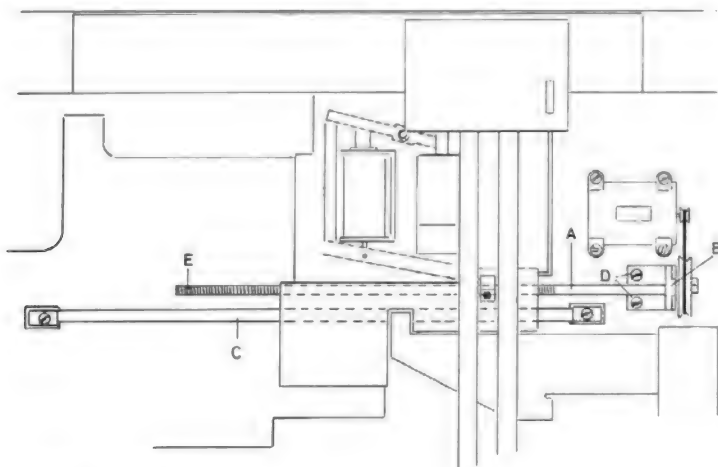
- 1: Run arm in over record.
- 2: Lower pickup.
- 3: Turn turntable by hand, checking that first operation of servo system occurs after 4 ± 1 turns and thereafter at every turn.
- 4: If the servo system does not operate within 4 ± 1 turns, loosen screw C and adjust eccentric B. Thereafter raise the arm and repeat items 2 - 4.
- 5: After adjustment of eccentric B, screw C should be tightened.
- 6: Make sure that the servo system does not regulate backwards until after the turntable has turned at least 10 cm backwards from the forwards regulation. To make adjustment if necessary, correct the spacing (1 mm) between the diaphragm and the photoresistor.

Adjustment of Damper Cylinder



Adjust valve A so that pickup lowers in between 1 and 1.5 sec.

Adjustment of Spindle



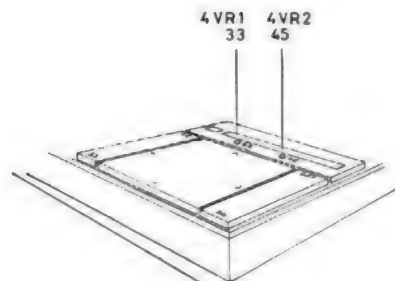
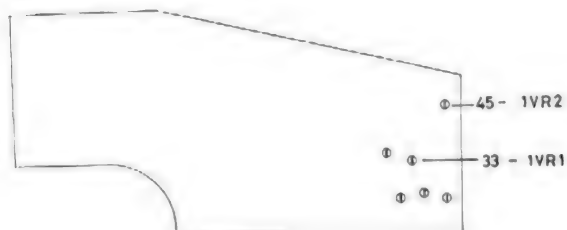
Adjust spindle A so that it is parallel with tie-bar C.

To adjust, loosen screws D and turn cap B.

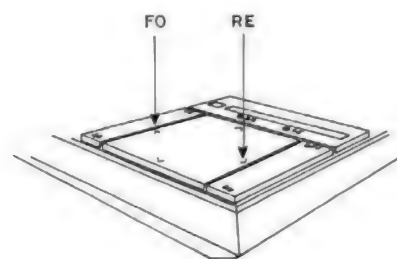
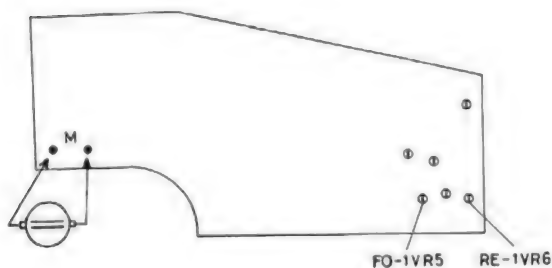
Best parallelism is obtained when spindle A has minimum eccentricity at E during operation.

ELECTRICAL ADJUSTMENTS

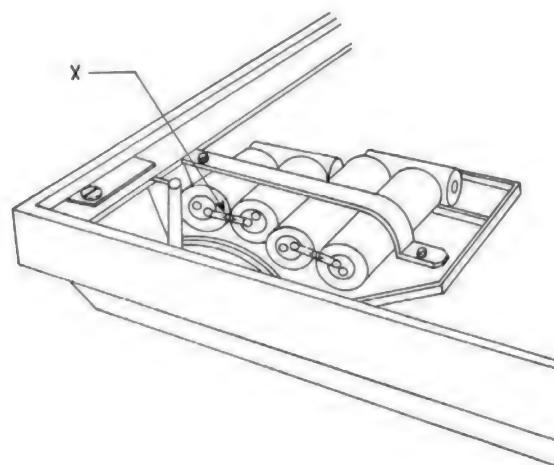
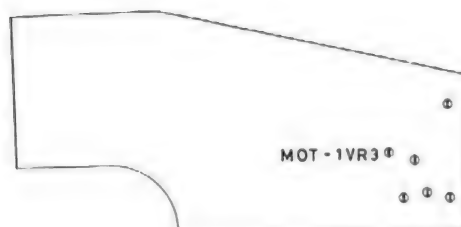
Remove Beogram 4000 cover plates (see Disassembly).

Speed Adjustment

Connect the instrument to the mains. Press On and thereafter LIFT so that the pickup arm is stationary and the turntable is rotating. Set 33 r.p.m. potentiometer 4VR1 at mid-scale. Adjust 33 r.p.m. potentiometer 1VR1 so that 33 r.p.m. stroboscope dial appears to be standing still. Set 45 r.p.m. potentiometer 4VR2 at mid-scale. Adjust 45 r.p.m. potentiometer 1VR2 so that 45 r.p.m. stroboscope dial appears to be standing still.

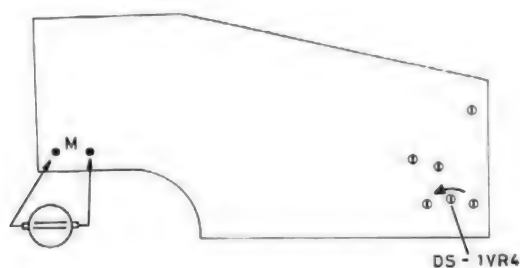
Adjustment of Slow Slide Transport

Connect a vacuum-tube voltmeter across the DC motor at M. Set vacuum-tube voltmeter at mid-scale and switch to 10-volt range. Applying light pressure to the in-transport panel (FO), adjust 1VR5 (FO) until the vacuum-tube voltmeter reads between 2.5 and 3.0 volts. Adjust 1VR6 (RE) so that a similar reading in the opposite direction is obtained when the transport panel (RE) is pressed lightly.

Adjustment of Voltage for Drive Motor

Connect AF voltmeter and oscilloscope at point X so that measurement is made with respect to chassis (0). In the 33 r.p.m. position, adjust potentiometer 1VR3 for maximum voltage though not more than 6.5 volts r.m.s. or approx. 18 volts p-p and so that distortion does not occur.

Adjustment of Differential Stop



Connect oscilloscope with disabled D-deflection across the motor at M.

Run the slide in so that MV contacts are operated.

Lower the arm before the run-off groove is reached on a 17 cm record.

Adjust potentiometer 1VR4 so that the stop releases when motor voltage is 1.8 volts.

Thereafter make sure that the stop releases on a 30 cm record.

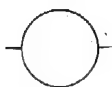
LUBRICATION

The need for relubrication is very little. The instructions below should be followed for overhauls and replacement of important mechanical parts.

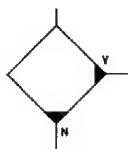
| | |
|--|-------------------------------------|
| Bearing for arm 195 Bearing for arm 198 Bearing for arm 205 Spindle 224 Bearing for turntable 100 | Everyman oil 3984211 |
| - Damper cylinder 255 | Dow corning 200 fluid 3984214 |
| Spring 192 Spring 199 Shaft 60 Bearing for spindle 122 Shaft for position giver 227 Under pointer 229 | Beacon Q 3984210 |

FAULT-FINDING SYSTEMATICS**Testing and Fault-finding Diagram**

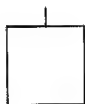
The diagram is composed by means of four symbols.



A circle denotes an activity that must be carried out in order for the test to continue.



A square standing on end contains a question that must be answered with yes or no, thereafter continuing in the direction of the answer, Y or N.



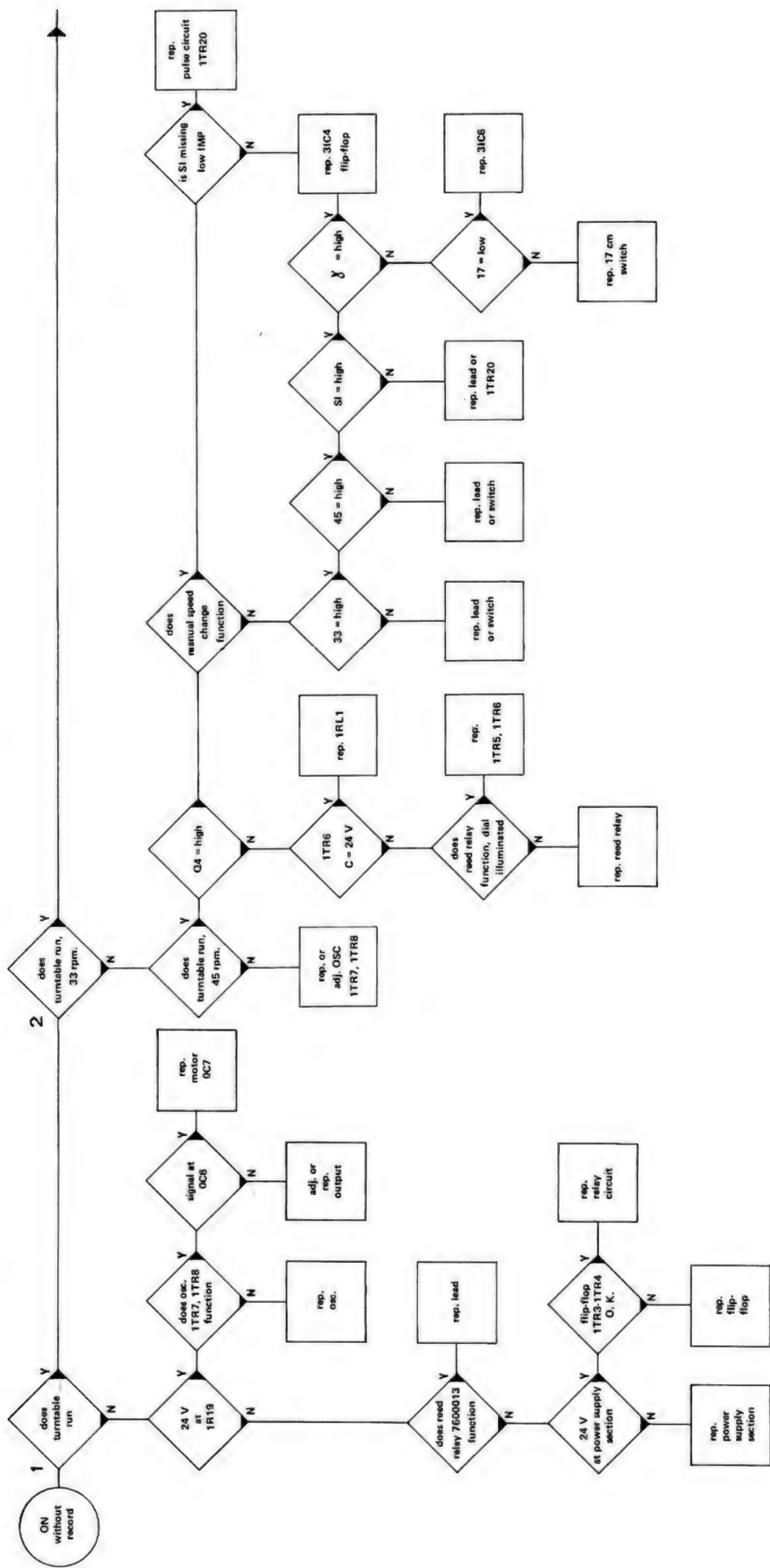
This square gives the designations of the main components of the circuit to be repaired.

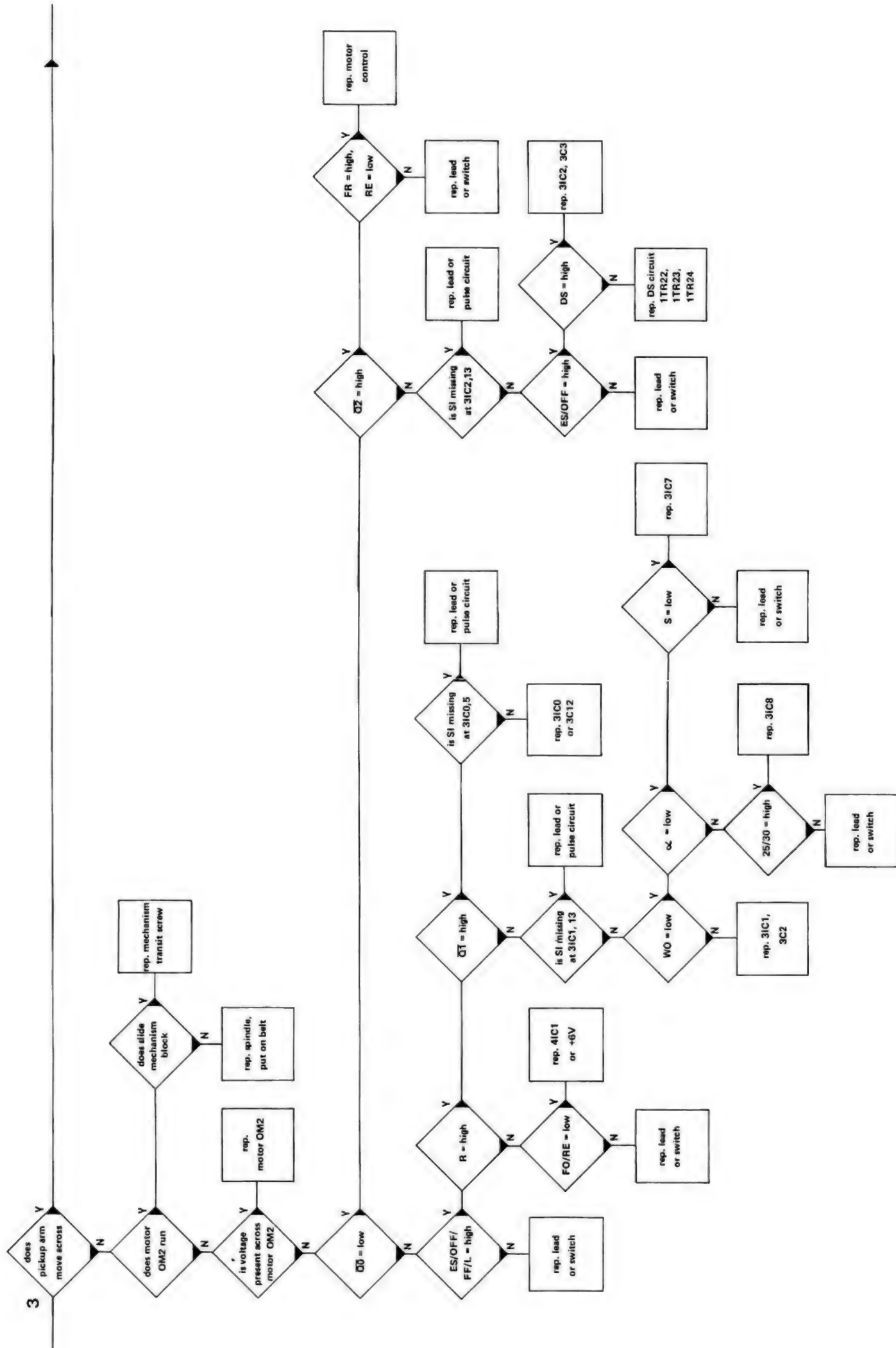


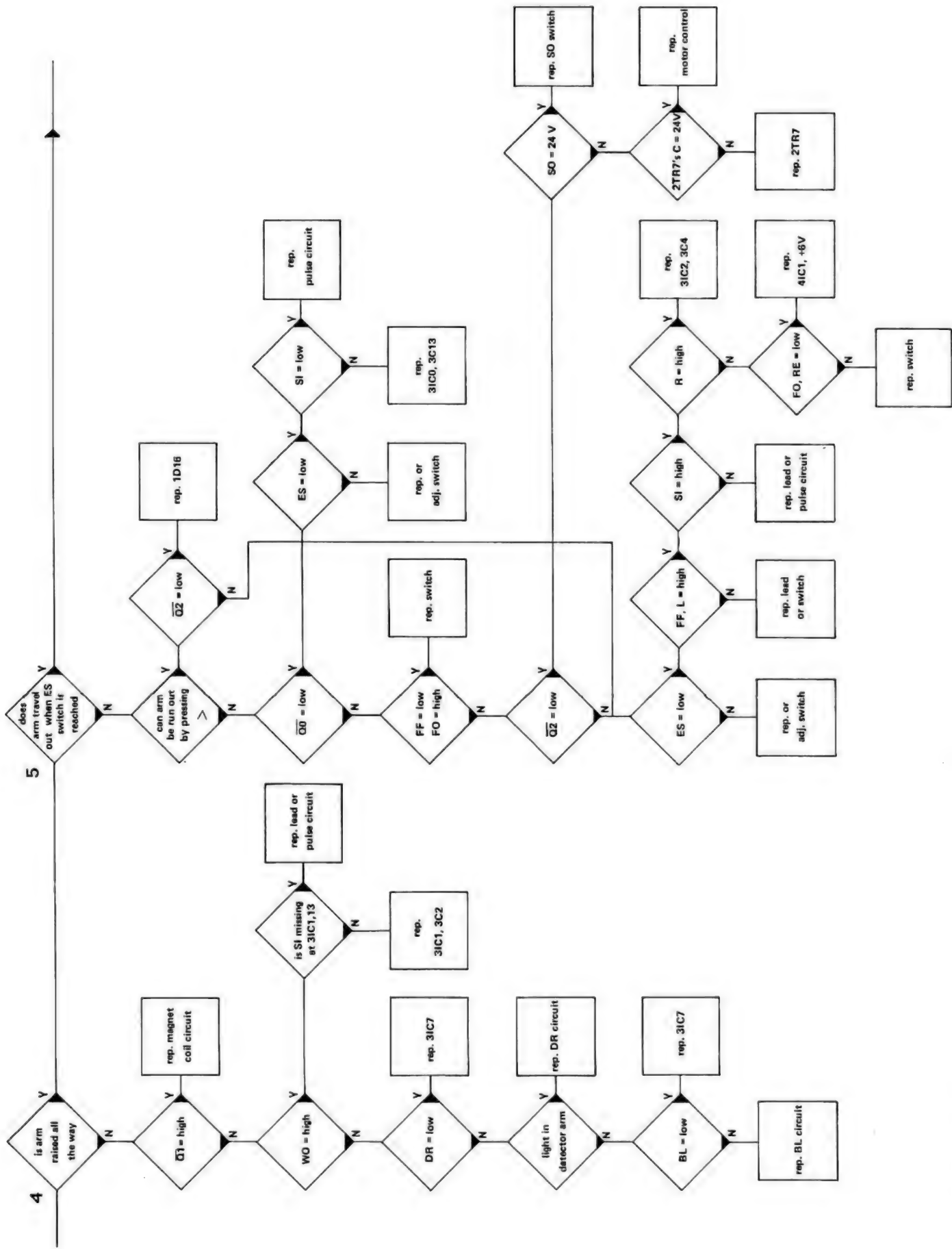
A triangle refers to a previous section.

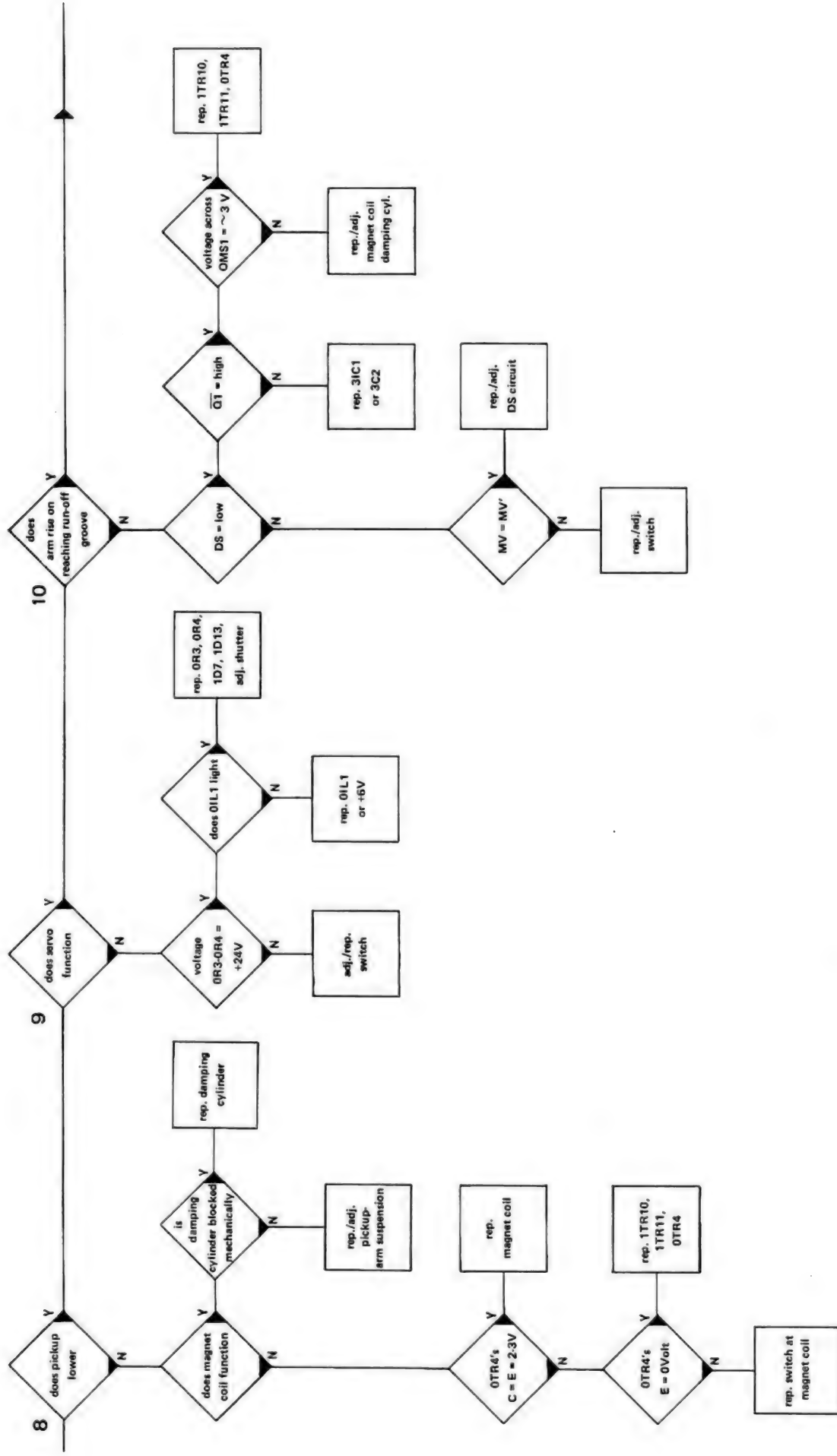
The question in the preceding square is found in the section to which reference is made, thereafter continuing in the direction of Y or N.

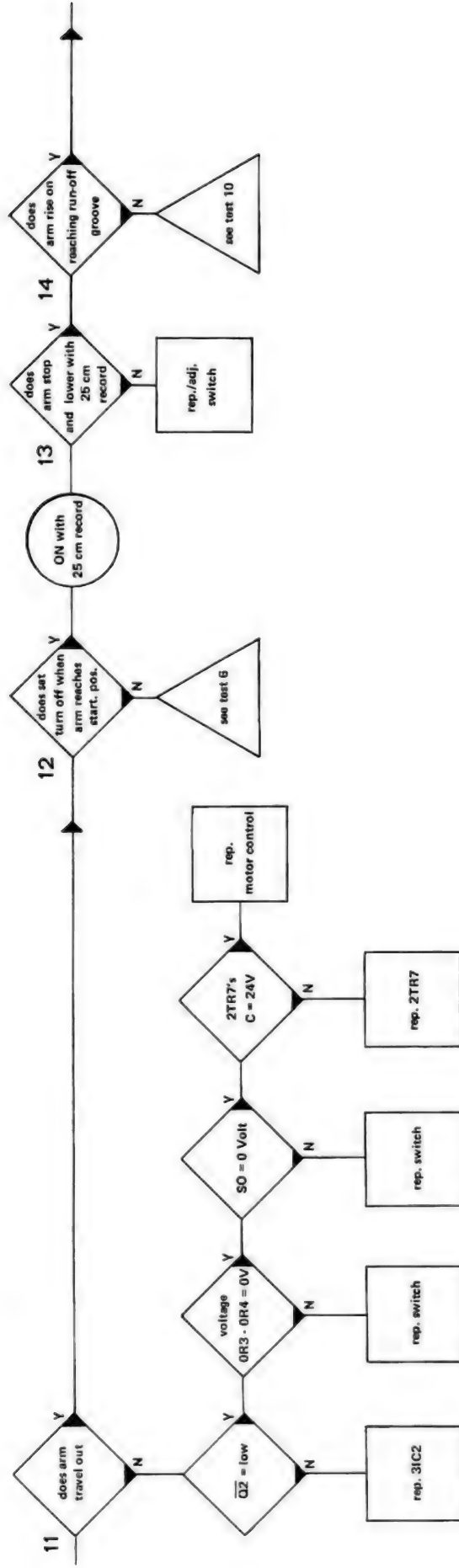
If the top horizontal line can be traced without encountering a no-answer, the controlling functions of the set will be O. K.

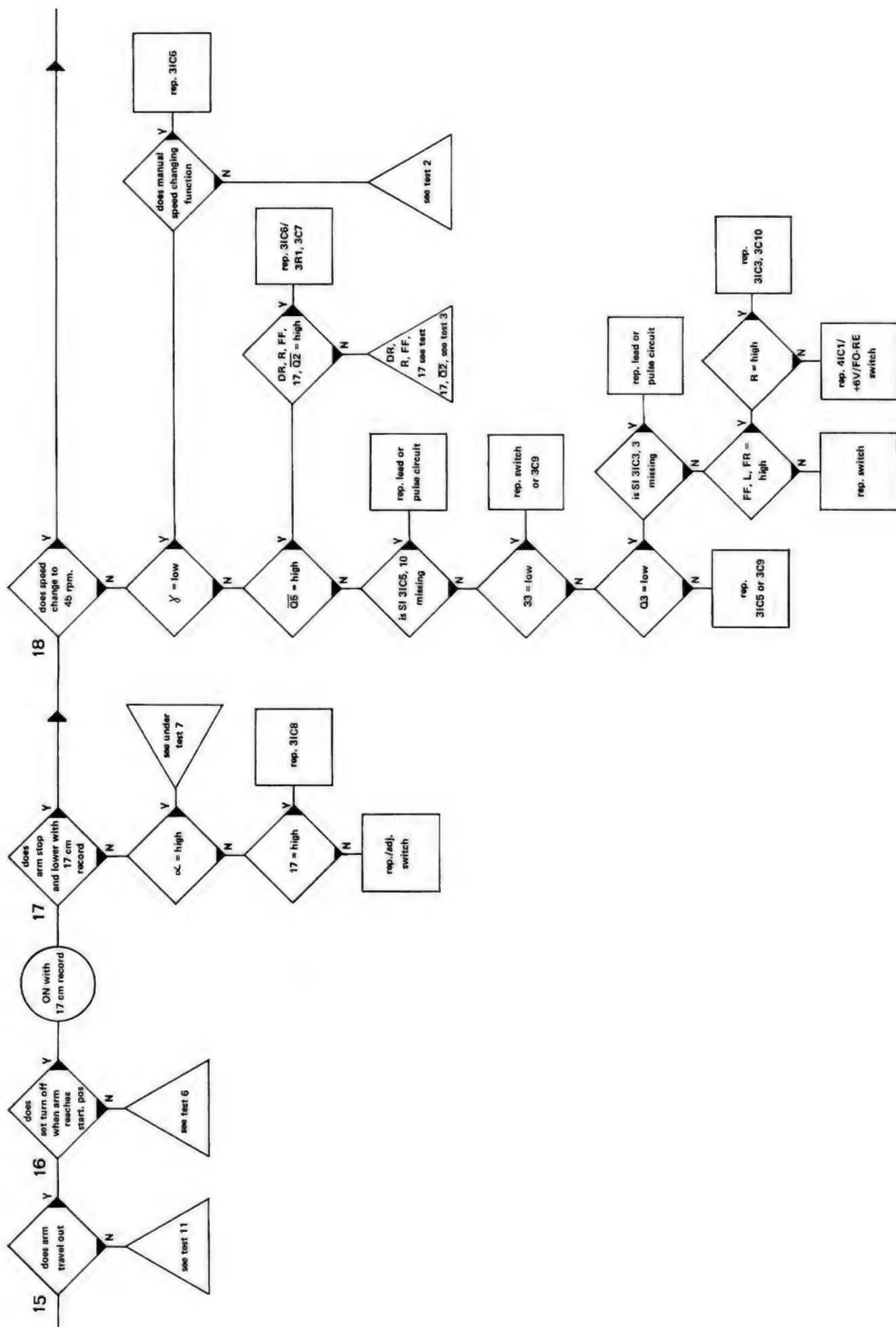


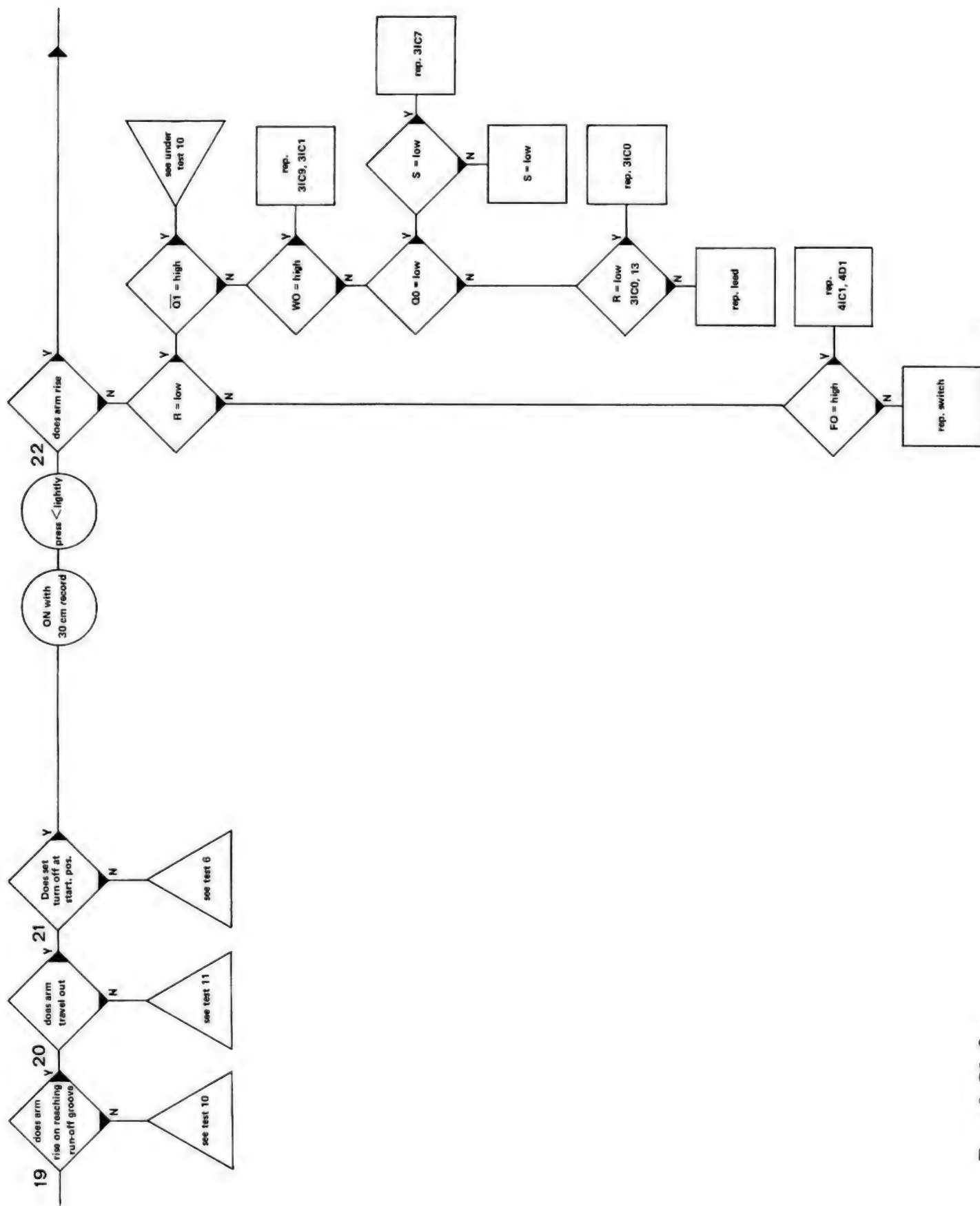


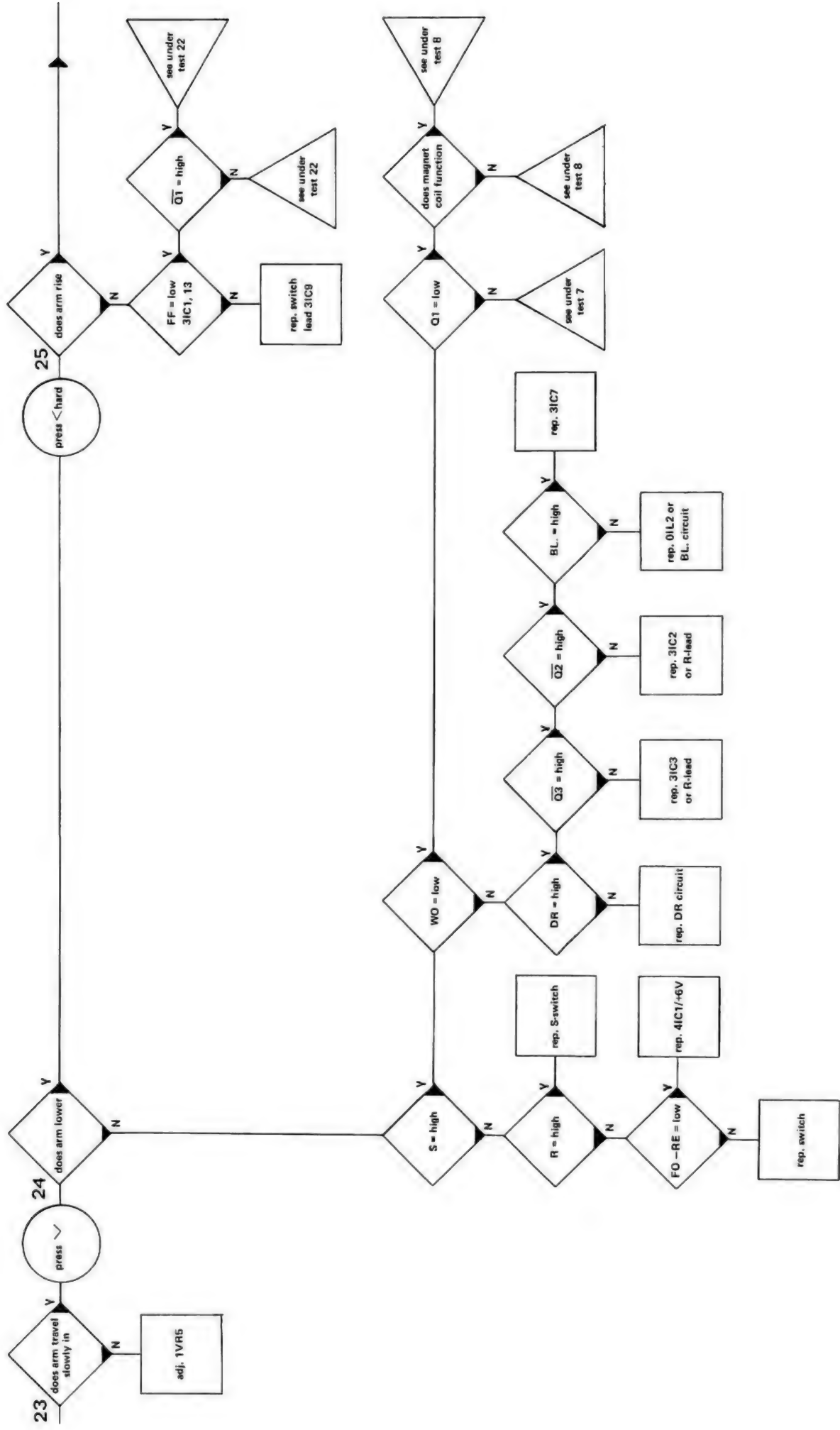


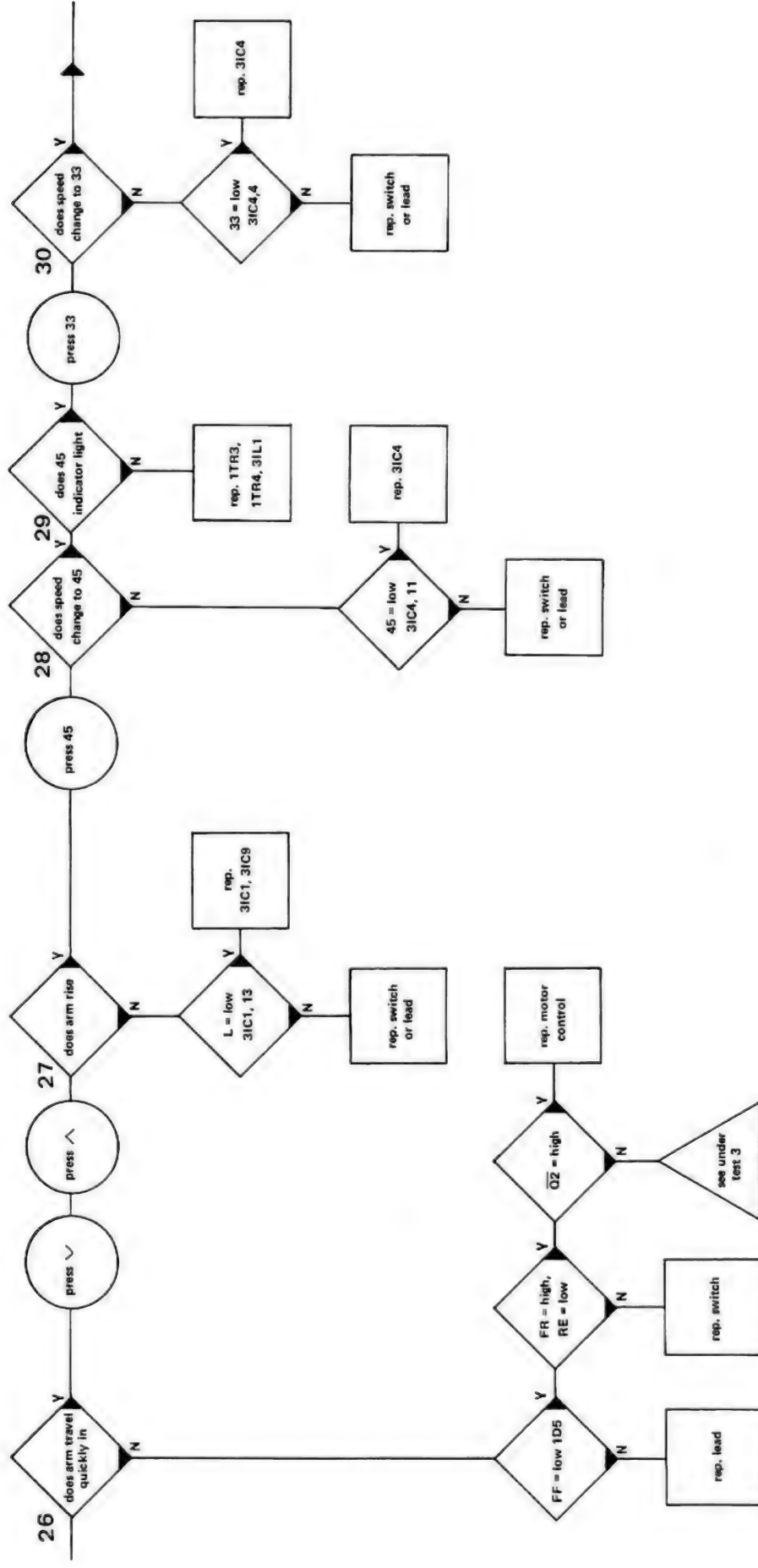


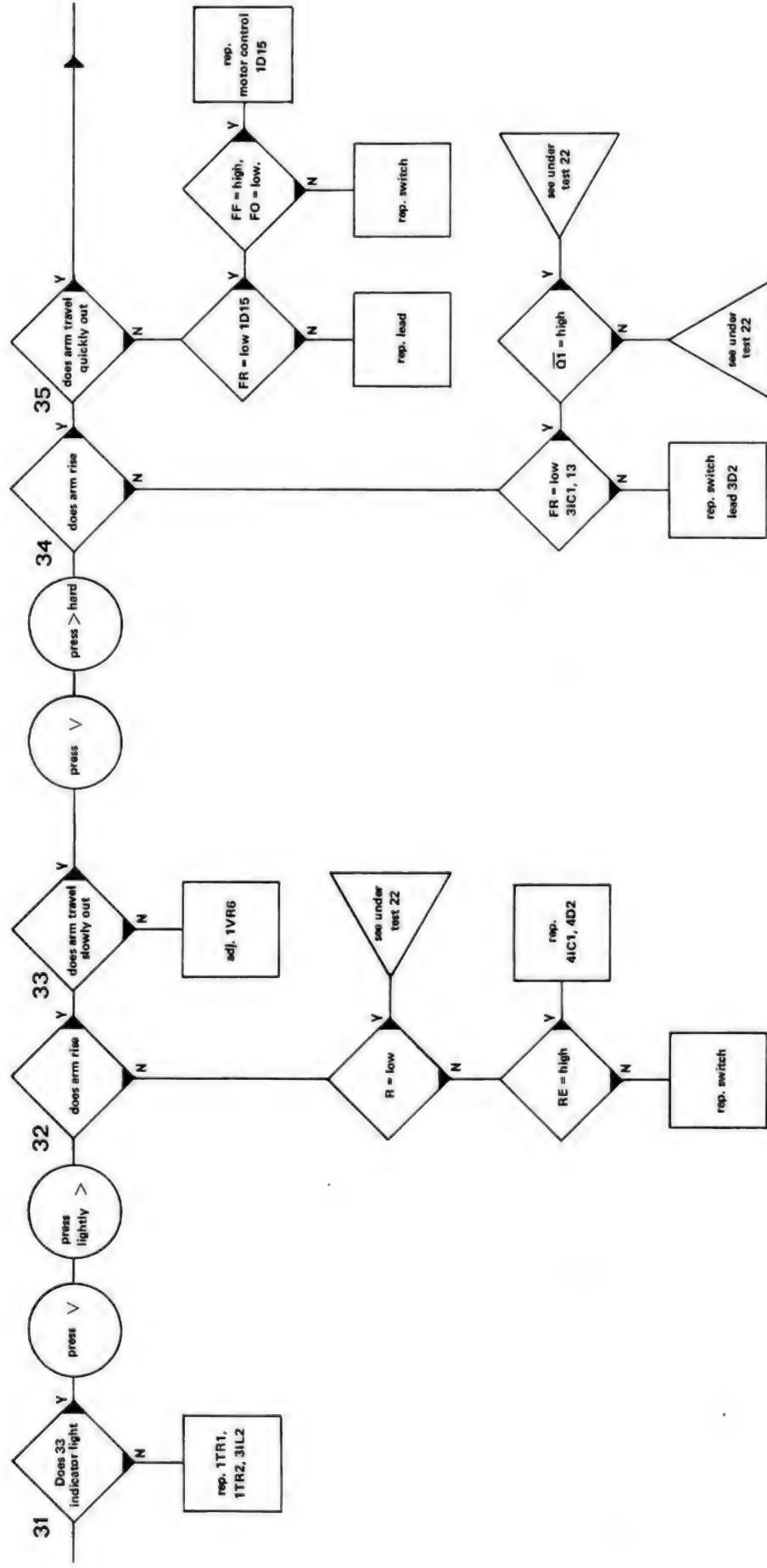


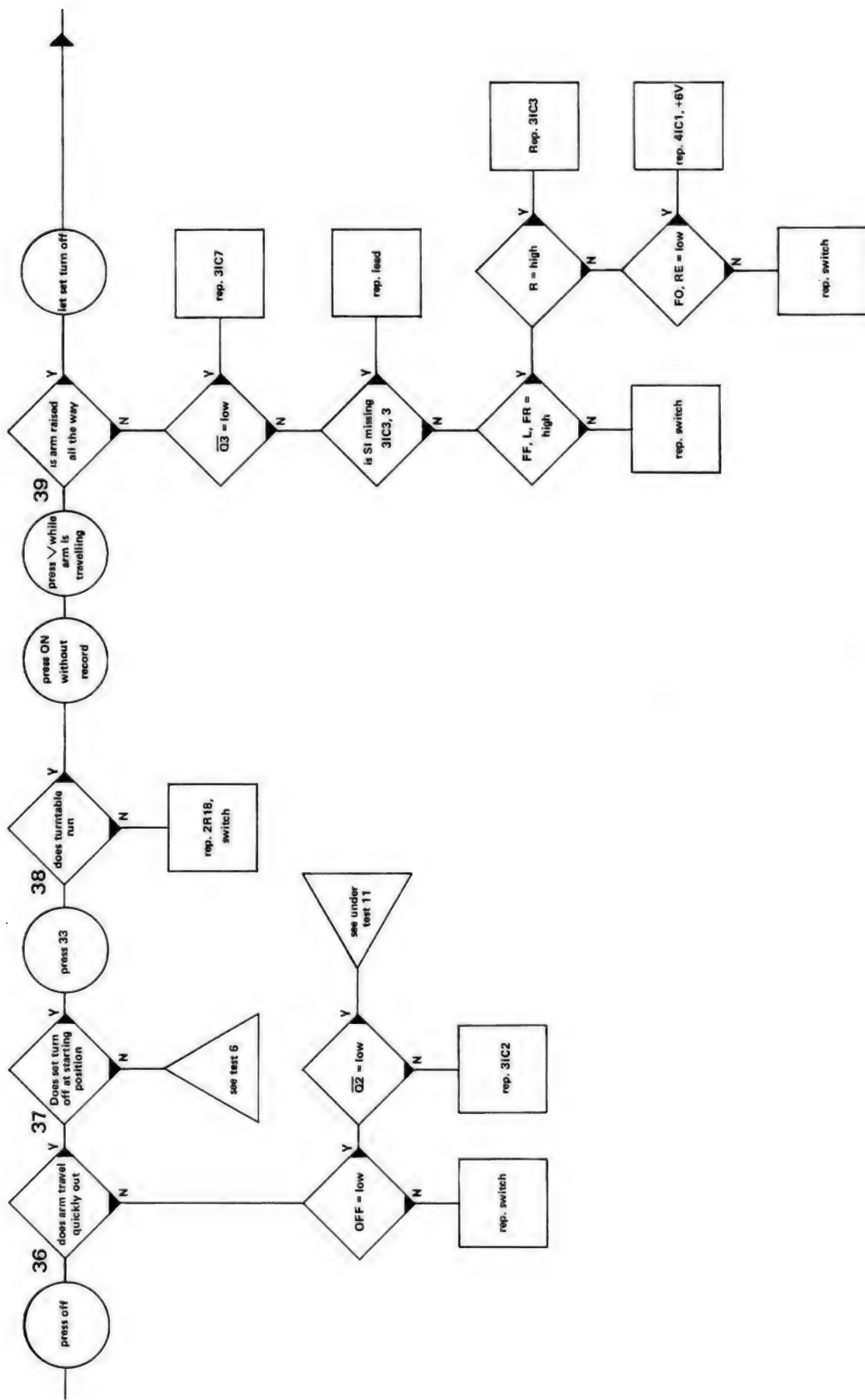


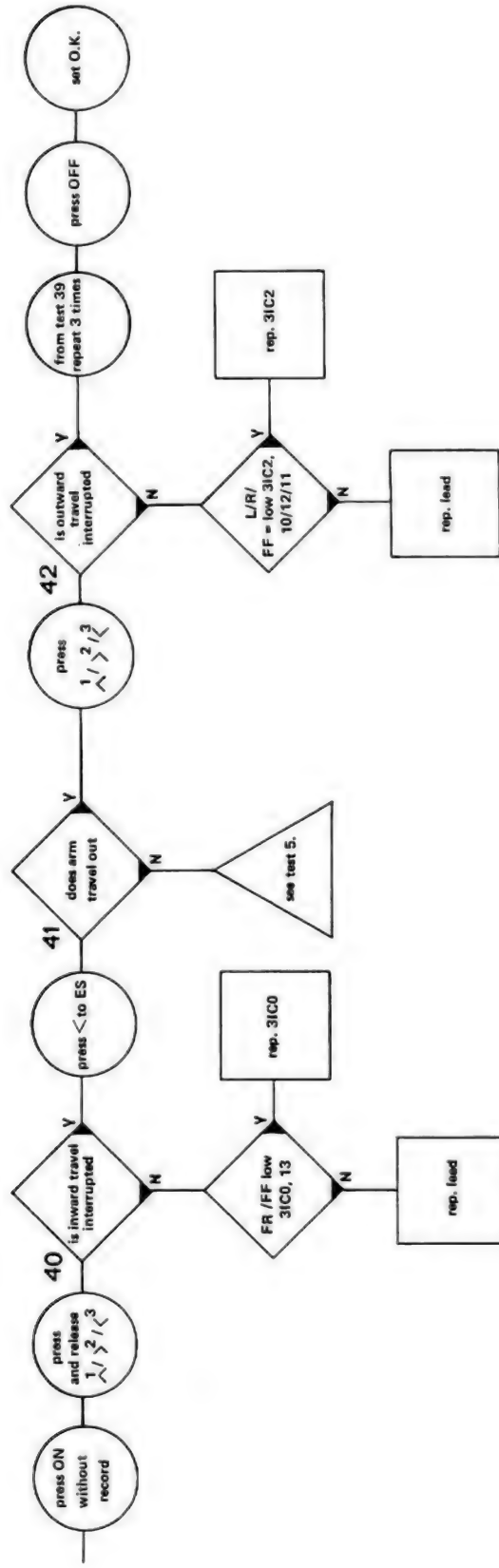


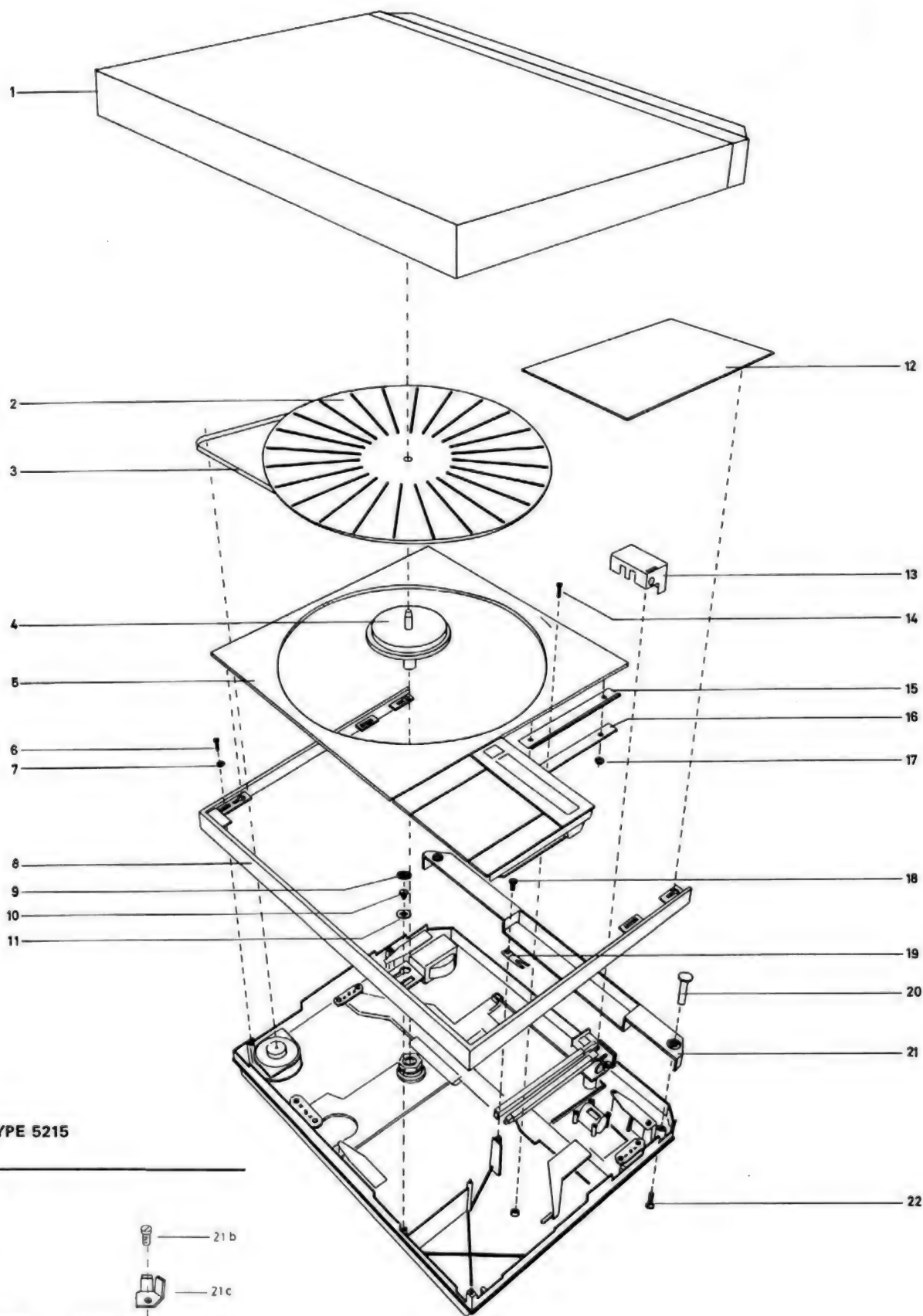






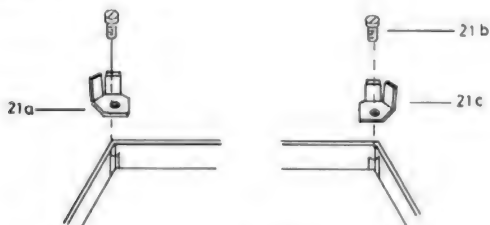






BEOGRAM 4000, TYPE 5215
Correct on page 6-1

Guide for back piece



| | | |
|-----|-------|---------|
| 21a | Angle | 3014028 |
| 21b | Screw | 2038207 |
| 21c | Angle | 3014029 |

PARTS LIST FOR BEOGRAM 4000, TYPE 5215

see page 6-1

| | | |
|----|---------|------------------------|
| 1 | 3164121 | Dust Cover |
| 2 | 2726054 | Turntable |
| 3 | 2732018 | Belt |
| 4 | 2726047 | Turntable |
| 5 | 3458081 | Top plate |
| 6 | 2038009 | Screw AM 3 X 8 DIN 63 |
| 7 | 2803004 | Washer |
| 8 | 3411701 | Cabinet, teak |
| | 3411703 | Cabinet, rosewood |
| | 3411704 | Cabinet, oak |
| 9 | 3912037 | Felt washer |
| 10 | 2038901 | Screw |
| 11 | 2620019 | Washer |
| 12 | 3458080 | Top plate |
| 13 | 3164142 | Cover |
| 14 | 2038216 | Screw AM 3 X 10 DIN 84 |
| 15 | 2816085 | Spring |
| 16 | 3014023 | Guide plate |
| 17 | 2380093 | Nut M 3 |
| 18 | 2042201 | Screw AM 4 X 4 DIN 84 |
| 19 | 2816083 | Holder |
| 20 | 2994012 | Bushing |
| 21 | 3452143 | Back plate |
| 22 | 2042216 | Screw AM 4 X 16 DIN 84 |

| | | |
|----|---------|--------------------------|
| 25 | 3164113 | Dust cover |
| | 3010007 | Stop |
| | 2560036 | Decorative list |
| 26 | 2038055 | Screw AM 3 X 6 DIN 63 |
| 27 | 2830014 | Bearing needle |
| 28 | 3030023 | Mounting hardware, left |
| | 3030022 | Mounting hardware, right |
| 29 | 3015030 | Guide rail |
| 30 | 3452145 | Back plate |
| 31 | 2072704 | Threaded pin |
| 32 | 2038050 | Screw AM 3 X 4 DIN 63 |
| 33 | 2819062 | Spring |

| | | |
|----|---------|-----------------------|
| 40 | 3458092 | Dial |
| 41 | 2775224 | Pushbutton |
| 42 | 2775177 | Pushbutton |
| 43 | 2816067 | Spring |
| 44 | 3152063 | Circuit board holder |
| 45 | 8009016 | PC board |
| 46 | 3030021 | Holder |
| 47 | 3151079 | Clamp |
| 48 | 8009015 | PC board |
| 49 | 2038206 | Screw AM 3 X 4 DIN 84 |
| 50 | 2834022 | Shaft |
| 51 | 2812040 | Spring |
| 52 | 2775176 | Pushbutton |
| 53 | 3114050 | Chassis |
| | 3322034 | Mirror |
| 54 | 2380011 | Nut M 3 |
| 55 | 2038206 | Screw AM 3 X 4 DIN 84 |

see page 6 - 6

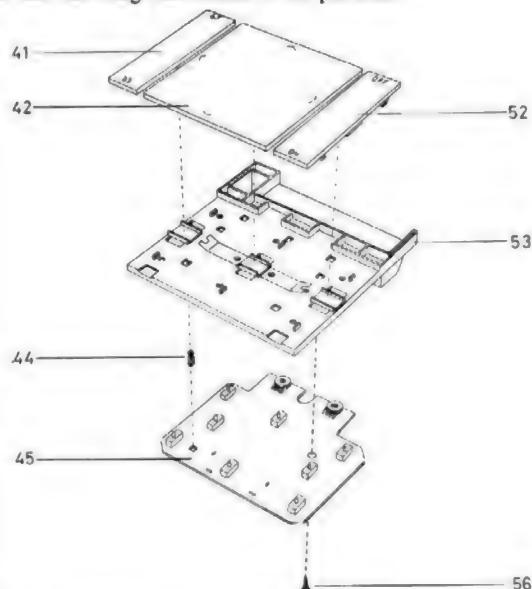
| | | |
|------|---------|-------------------------|
| 59 | 2905045 | Bearing |
| 60 | 2830049 | Shaft |
| 61 | 2038216 | Screw AM 3 X 10 DIN 84 |
| 62 | 8009011 | PC board |
| 63 | 2072710 | Threaded pin |
| 64 | 2380094 | Nut |
| 65 | 2042211 | Screw, AM 4 X 12 DIN 84 |
| 66 | 3014021 | Holder |
| 67 | 2628005 | Spring |
| 68 | 2381008 | Nut |
| 69 | 2993024 | Threaded pin |
| 70 | 2038233 | Screw AM 3 X 20 DIN 84 |
| 71 | 2038214 | Screw AM 3 X 8 DIN 84 |
| 72 | 7530008 | Solder tag |
| 73 | 2510089 | Clamp |
| 74 | 2510090 | Clamp |
| 75 | 4200265 | El. capacitor |
| 76 | 4200260 | El. capacitor |
| 77 | 4200259 | El. capacitor |
| 78 | 4200258 | El. capacitor |
| 79 | 2038207 | Screw, AM 3 X 5 DIN 84 |
| 80 | 2622041 | Washer |
| 81 | 3114042 | Chassis |
| 82 | 3014022 | Belt guide |
| 83 | 2038239 | Screw AM 3 X 35 DIN 84 |
| 84 * | 8400061 | Motor |
| | 2722010 | Pulley |
| | 3151117 | Mounting hardware |
| | 2038055 | Screw AM 3 X 6 DIN 63 |
| | 2038208 | Screw, AM 3 X 5 DIN 84 |
| 85 | 2938074 | Rubber bushing |
| 86 | 2381007 | Nut |
| 87 | 2628005 | Spring |
| 88 | 8300160 | Diode |
| 89 | 5012011 | Resistor |
| 90 | 7530045 | Solder tag |
| 91 | 3172027 | Insulating piece |
| 92 | 3170047 | Mica sheet |
| 93 | 8320103 | Transistor |
| 94 | 3164027 | Cover |
| 95 | 2034215 | Screw AM 2 X 8 DIN 84 |
| 96 | 2038206 | Screw AM 3 X 4 DIN 84 |
| 97 | 2938097 | Insulating bushing |
| 98 | 8320266 | Transistor |
| | 8320265 | Transistor |
| | 8320312 | Transistor |

BEOGRAM 4000, TYPE 5215

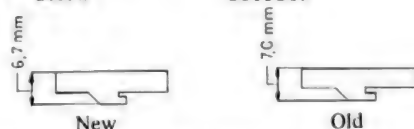
Correct on page 6-4

Pushbutton system

The pushbutton system has been modified so that PC pos. No. 45 is screwed to chassis 53. Also, push-buttons and pins have been modified. This results in the following corrections to the parts list:



| | | |
|----|-----------------|----------|
| 41 | Pushbutton | 2775275 |
| 42 | Pushbutton | 2775277 |
| 44 | PC board holder | goes out |
| 52 | Pushbutton | 2775331 |
| 56 | Screw | 2013209 |



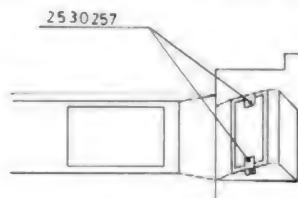
NOTE: New and old parts constitute a whole.

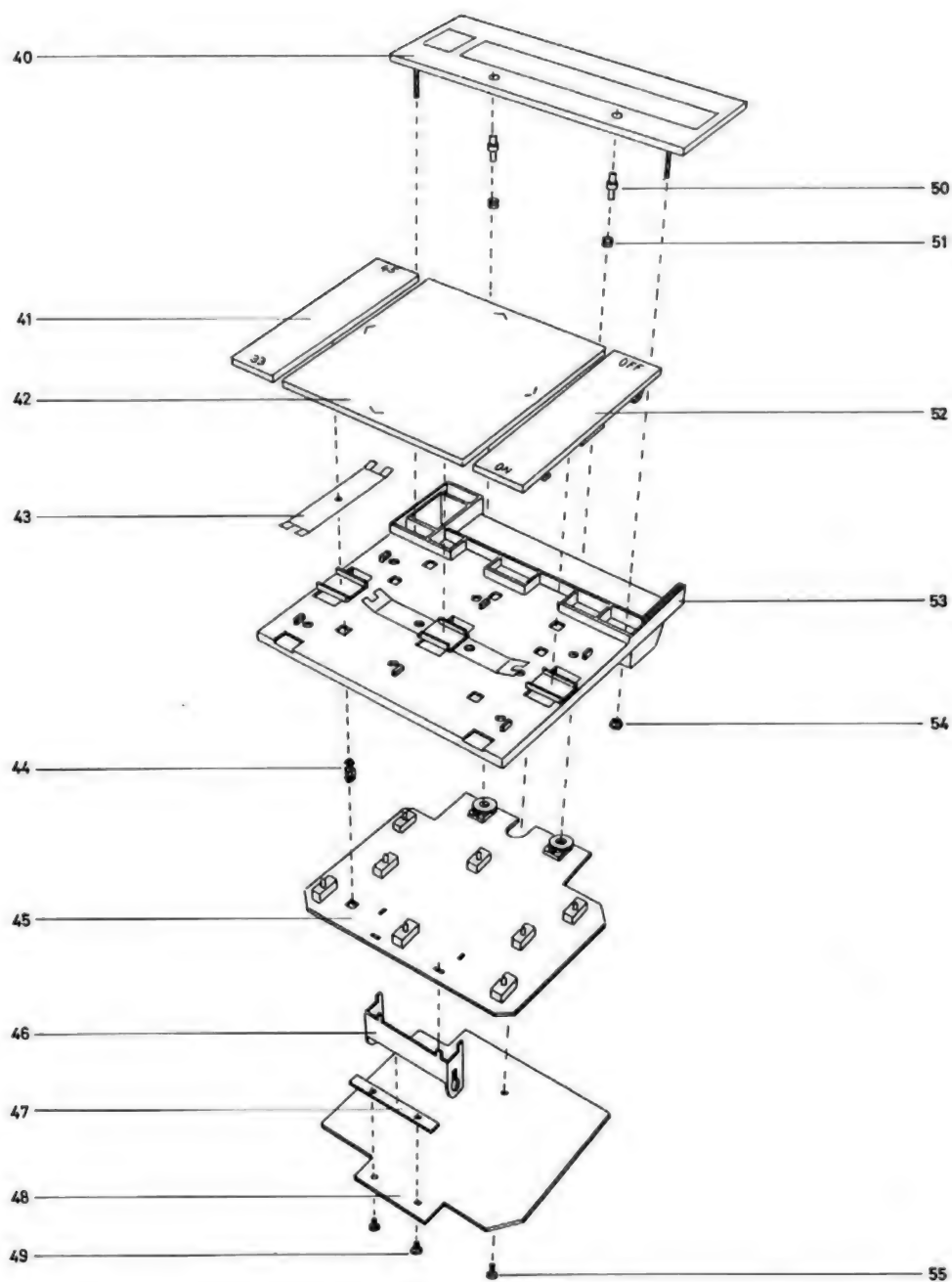
BEOGRAM 4000, TYPE 5215

Correct on page 6-4

Mirror, pushbutton chassis

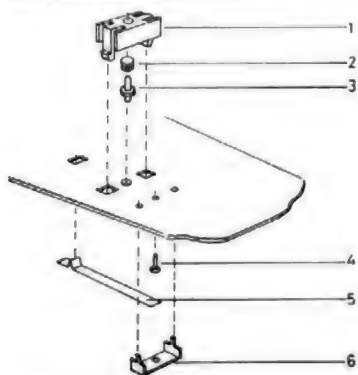
In order to secure better fastening of the mirror, two angles have been introduced which are glued on.



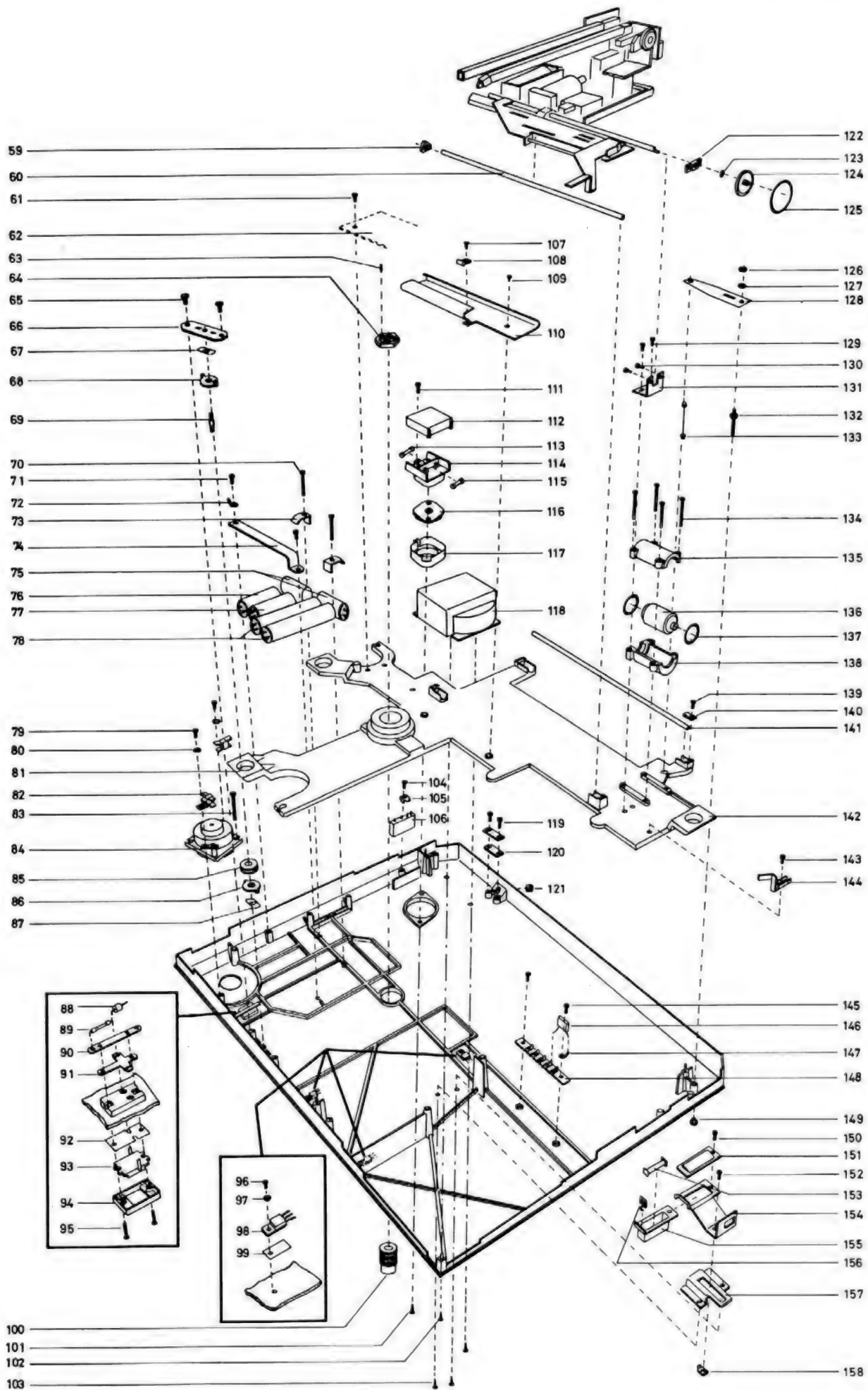


BEOGRAM 4000, TYPE 5215

Correct on page 6-4



| Pos. | 33 | FF | 45 | S | L | ON | FR | OFF |
|------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. | 3152068 | 3152068 | 3152068 | 3152068 | 3152068 | 3152068 | 3152068 | 3152068 |
| 2 | | | | | | | | |
| 3 | 7500067 | 2992051 | 7500067 | 2992052 | 7500067 | 7500067 | 2992051 | 7500067 |
| 4 | | 2364024 | | 2364024 | | | 2364024 | |
| 5 | 7500051 | 7500051 | 7500051 | 7500051 | 7500051 | 7500051 | 7500051 | 7500051 |
| 6 | 7500061 | 7500050 | 7500061 | | 7500061 | 7500061 | 7500050 | 7500061 |



beginning on page 6 - 4

| | | |
|-----|---------|-----------------------------|
| 99 | 3170121 | Mica sheet |
| 100 | 2905046 | Bearing |
| 101 | 2013012 | Screw 2,84 X 12,7 ART 4260 |
| 102 | 2013002 | Screw ART 4260 2.84 X 6.35 |
| 103 | 2038055 | Screw AM 3 X 6 DIN 63 |
| 104 | 2038209 | Screw AM 3 X 6 DIN 84 |
| 105 | 2574043 | Bracket |
| 106 | 8310020 | Rectifier B 80 C 2200 |
| 107 | 2013200 | Screw Art 4261 2.84 X 6.35 |
| 108 | 2510091 | Lead holder |
| 109 | 2013002 | Screw Art 4260 2.84 X 6.35 |
| 110 | 3013017 | Lead holder |
| 111 | 2038214 | Screw AM 3 X 8 DIN 84 |
| 112 | 3164109 | Cover |
| | 3180607 | Sticker |
| 113 | 6600000 | Fuse |
| 114 | 3131060 | Fus holder |
| 115 | 6600000 | Fuse |
| 116 | 7401001 | Mains-voltage switch |
| 117 | 3131050 | Housing |
| 118 | 8013107 | Mains transformer |
| 119 | 2038216 | Screw AM 3 X 10 DIN 84 |
| 120 | 0287155 | Clamp |
| 121 | 2938077 | Rubber bushing |
| 122 | 2905034 | Bearing |
| 123 | 2620027 | Washer |
| 124 | 2722008 | Pulley |
| | 2070701 | Threaded pin |
| | 2380068 | Nut |
| 125 | 2732016 | Belt |
| 126 | 2380016 | Nut |
| 127 | 2622022 | Washer |
| 128 | 2816081 | Spring |
| 129 | 2038206 | Screw AM 3 X 4 DIN 84 |
| 130 | 2038206 | Screw AM 3 X 4 DIN 84 |
| 131 | 2530253 | Bracket |
| 132 | 2072914 | Screw |
| 133 | 3955022 | Suspension |
| 134 | 2038235 | Screw AM 3 X 25 DIN 84 |
| 135 | 3131048 | Housing |
| 136 | 8400062 | Motor |
| | 2722005 | Pulley |
| 137 | 2732015 | Rubber disc. |
| 138 | 3131048 | Housing |
| 139 | 2038216 | Screw AM 3 X 10 DIN 84 |
| 140 | 2644003 | Clamp |
| 141 | 2830045 | Shaft |
| 142 | 3114042 | Chassis |
| 143 | 2038206 | Screw AM 3 X 4 DIN 84 |
| 144 | 2542295 | Bracket |
| 145 | 2038208 | Screw, AM 3 X 5 DIN 84 |
| 146 | 4130087 | Capacitor |
| 147 | 7530005 | Solder tag |
| 148 | 7536025 | Tagstrip |
| 149 | 0585018 | Plastic foot |
| 150 | 2038249 | Screw AM 3 X 8 DIN 84 nylon |
| 151 | 3375017 | Cover |
| 152 | 2038208 | Screw, AM 3 X 6 DIN 84 |
| 153 | 8230038 | Neon lamp |
| 154 | 3151092 | Holder |
| | 3322035 | Mirror |
| 155 | 3131058 | Housing for neon lamp |
| 156 | 7500064 | Contact spring |
| 157 | 3151090 | Holder |
| 158 | 2389030 | Nut |

BEOGRAM 4000, TYPE 5215

Correct on page 6-7

Servobelt

As from unit No. 157700, a triangular belt has been introduced instead of the previous round one.

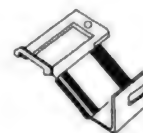
This results in the following corrections to the parts list:

| | | |
|-----|--------|---------|
| 124 | Pulley | 2722015 |
| 125 | Belt | 2732032 |
| 136 | Pulley | 2722016 |

The belt and pulleys constitute a whole.

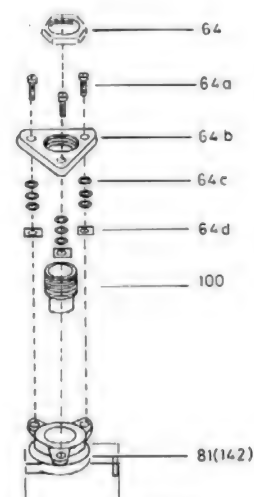
Holder for neon lamp (154)

Two mouldings as shown by the sketch have been introduced in current production. They are glued on.



Moulding

3950229

Disc bearing (tiltable)

| | | |
|-----|---------------|---------|
| 64 | Nut | 2380096 |
| 64a | Screw | 2038216 |
| 64b | Cap | 2641076 |
| 64c | Washer | 2624027 |
| 64d | Plastic spire | 2390020 |
| 100 | Bearing | 2905046 |
| 81 | Chassis | 3114066 |

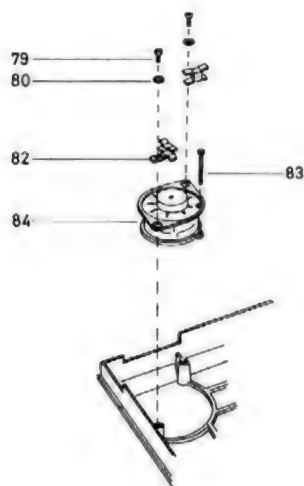
Washers 64c should be mounted as shown by the sketch.



| | | |
|-----|---------------|---------|
| 124 | Pointed screw | 2072921 |
|-----|---------------|---------|

Correct on page 6-7 to be
continued on page 6-8

Motor with topmounting



| | | |
|----|---------|-------------------------|
| 79 | 2038207 | Screw, AM 3 X 5 DIN 84 |
| 80 | 2622041 | Washer |
| 82 | 3014022 | Belt guide |
| 83 | 2038239 | Screw, AM 3 X 35 DIN 84 |
| 84 | 8400046 | Motor |
| | 2722007 | Pulley |

Not shown parts

| | |
|---------|------------------------------|
| 6271048 | Mains lead |
| 6270010 | Pickup cable with plug |
| 3535024 | Instruction diagram |
| 3391384 | Outer carton |
| 3391385 | Top/bottom inserts |
| 3397157 | Packing, foam insert, lid |
| 3397158 | Packing, gable insert, left |
| 3397159 | Packing, gable insert, right |

BEOGRAM 4000, TYPE 5215

Correct on page 6-7

Transformer

| | | |
|-----|-------------|---------|
| 118 | Transformer | 8013131 |
| 214 | PC unit | 8009013 |



PC unit belonging to transformer 8013107: When



substituting transformer 8013131 it is necessary to replace PC unit 8009013.

See sketch.

Drive motor

| | | |
|----|------------------------------------|---------|
| 84 | Drive motor with mounting bushings | 8400061 |
| | Drive motor less bushings | 8400066 |

Both motors are equipped with drive bushing 2722010



82 Belt guide goes out

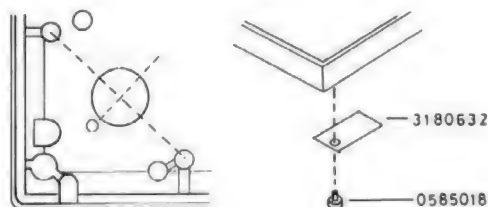
BEOGRAM 4000, TYPE 5215

Correct on page 6-8

Drive motor

When replacing motor 8400046 with motor 8400061, a 20 mm dia. hole must be drilled in the bottom to accommodate the shaft and bottom bearing.

After having installed the motor, affix sticker 3180632 over the hole in the bottom.



see page 6-11

| | | |
|-----|---------|---------------------------|
| 170 | 2038206 | Screw AM 3 X 4 DIN 84 |
| 171 | 3151084 | Chassis |
| 172 | 2390004 | Circlip |
| 173 | 2812037 | Spring |
| 174 | 7500058 | Spring |
| 175 | 2389030 | Nut |
| 176 | 7500057 | Spring |
| 177 | 2038247 | Screw, AM 3 X 6 DIN 84 |
| 178 | 7530005 | Solder tag |
| 179 | 2072918 | Threaded pin |
| 180 | 3151086 | Holder |
| 181 | 2816074 | Spring |
| 182 | 2072705 | Threaded pin. |
| 183 | 2038247 | Screw, AM 3 X 6 DIN 84 |
| 184 | 3152076 | Holder |
| 185 | 2038208 | Screw, AM 3 X 5 DIN 84 |
| 186 | 3391407 | Transit protection device |
| 187 | 2034236 | Screw AM 2 X 3 DIN 84 |
| 188 | 7200022 | Socket |
| 189 | 3152088 | Holder |
| 190 | 3937808 | Arm |
| 191 | 2390004 | Circlip |
| 192 | 2810044 | Spring |
| | 6430026 | Insulation |
| 193 | 2034914 | Screw AM 2 X 6 DIN 63 |
| 194 | 8760002 | Fotoresistor |
| 195 | 2853025 | Arm |
| 196 | 8230020 | Lamp |
| 197 | 3375018 | Optics |
| 198 | 2853026 | Arm |
| 199 | 2810024 | Spring |
| 200 | 6810001 | Magnet coil |
| 201 | 2850047 | Shaft |
| 202 | 2038948 | Screw |
| 203 | 2852022 | Arm |
| 204 | 2034236 | Screw AM 2 X 3 DIN 84 |
| 205 | 2854022 | Arm |
| 206 | 2850052 | Pickup arm |
| 207 | 2034914 | Screw AM 2 X 6 DIN 63 |
| 208 | 2038216 | Screw AM 3 X 10 DIN 84 |
| 209 | 2641075 | Clamp |
| 210 | 2072911 | Threaded pin |
| 211 | 8905428 | Pick-up unit |
| | 3624008 | Service-kit for pick-up |
| 212 | 3302158 | Cap |
| 213 | 2038206 | Screw AM 3 X 4 DIN 84 |
| 214 | 8009013 | PC board |
| | 7500051 | Contact spring |
| | 2364024 | Rivet |
| | 2622002 | Washer |
| | 7530040 | Solder lug |
| 215 | 2038948 | Screw |
| 216 | 2624021 | Washer |
| 217 | 2038206 | Screw AM 3 X 4 DIN 84 |
| 218 | 8230025 | Lamp |
| 219 | 7201016 | Socket |

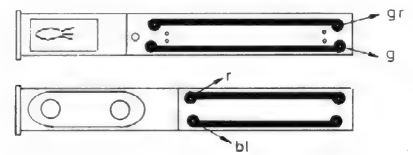
BEOGRAM 4000, TYPE 5215

Correct on page 6-9

212 Cap for pick-up 3302230

Detector arm

Soldered optics



188. Socket goes out
197 Optics 3375023

beginning on page 6-9

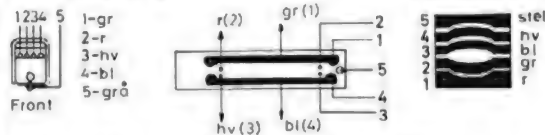
| | | |
|-----|---------|-----------------------------|
| 220 | 8009014 | PC board |
| | 7500051 | Contact spring |
| | 2364024 | Rivet |
| 221 | 2389031 | Nut |
| 222 | 2038208 | Screw, AM 3 X 5 DIN 84 |
| 223 | 3152074 | Holder |
| 224 | 2993025 | Spindle |
| 225 | 2038206 | Screw AM 3 X 4 DIN 84 |
| 226 | 2622041 | Washer |
| 227 | 2830046 | Shaft |
| 228 | 2390004 | Circlip |
| 229 | 3190053 | Pointer |
| 230 | 2644010 | Cover |
| 231 | 2812040 | Spring |
| 232 | 2798003 | Eccentric |
| 233 | 2819061 | Spring |
| 234 | 2851062 | Arm |
| 235 | 2812041 | Spring |
| 236 | 2390004 | Circlip |
| 237 | 2894029 | Shaft |
| 238 | 2802023 | Washer |
| 239 | 2038233 | Screw AM 3 X 20 DIN 84 |
| 240 | 2072705 | Threaded pin |
| 241 | 2034231 | Screw AM 2 X 4 DIN 84 |
| 242 | 2854023 | Arm |
| 243 | 2390004 | Circlip |
| 244 | 3342020 | Counterweight |
| 245 | 3152089 | Holder |
| 246 | 2390046 | Circlip |
| 247 | 2070400 | Threaded pin |
| 248 | 3150032 | Bearing holder |
| | 2900003 | Ball bearing |
| | 2622168 | Washer |
| | 2812036 | Spring |
| | 2390047 | Circlip |
| 249 | 2700008 | Adjustment bearing |
| 250 | 2834038 | Shaft |
| 251 | 2831015 | Shaft |
| 252 | 2361018 | Locking pin |
| 253 | 2622167 | Washer |
| 254 | 2038206 | Screw AM 3 X 4 DIN 84 |
| 255 | 3131059 | Damper cylinder |
| 256 | 2038222 | Screw AM 3 X 14 DIN 84 |
| 257 | 3164112 | Cover |
| 258 | 2854024 | Diaphragm arm |
| 259 | 2013203 | Screw 2.84 X 12.70 ART 4261 |
| 260 | 3131052 | Housing |
| | 5210004 | Fotoreistor |
| 261 | 3151085 | Holder |
| 262 | 2038946 | Screw |
| 263 | 2794029 | Roller |
| 264 | 2622041 | Washer |
| 265 | 2038208 | Screw, AM 3 X 5 DIN 84 |
| 266 | 2798003 | Eccentric |
| 267 | 3114046 | Chassis |
| | 3180536 | Sticker for transport screw |
| | 2038946 | Screw |
| | 2620028 | Rubber disc |
| 268 | 2625003 | Tooth-lock washer |
| 269 | 2380016 | Nut |
| 270 | 2510086 | Bracket |
| 271 | 6140272 | PC board |
| 272 | 2038206 | Screw AM 3 X 4 DIN 84 |

BEOGRAM 4000, TYPE 5215

Correct on page 6-10

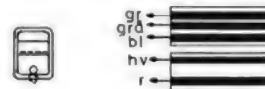
Pick-up arm

The pick-up arm has been modified so that the leads from the pick-up socket are soldered directly to the PC on pick-up arm holder 245.



| | | |
|-----|------------------------|---------|
| 206 | Pick-up arm, assembled | 2850073 |
| 244 | Counterbalance weight | 3342030 |
| 245 | Holder | 3152160 |

When replacing pick-up arm 2850052 with pick-up arm 2850073, counterbalance weight 3342020 must be replaced with counterbalance weight 3342030.



BEOGRAM 4000, TYPE 5215

Correct on page 6-10

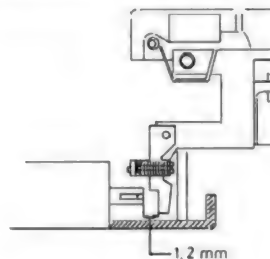
Stylus force spring (250)

The stylus force adjustment mechanism has been modified so that the shaft, spring, and gearwheel are mounted without use of glue. The mechanism is supplied in kit form under index No. 2834041.

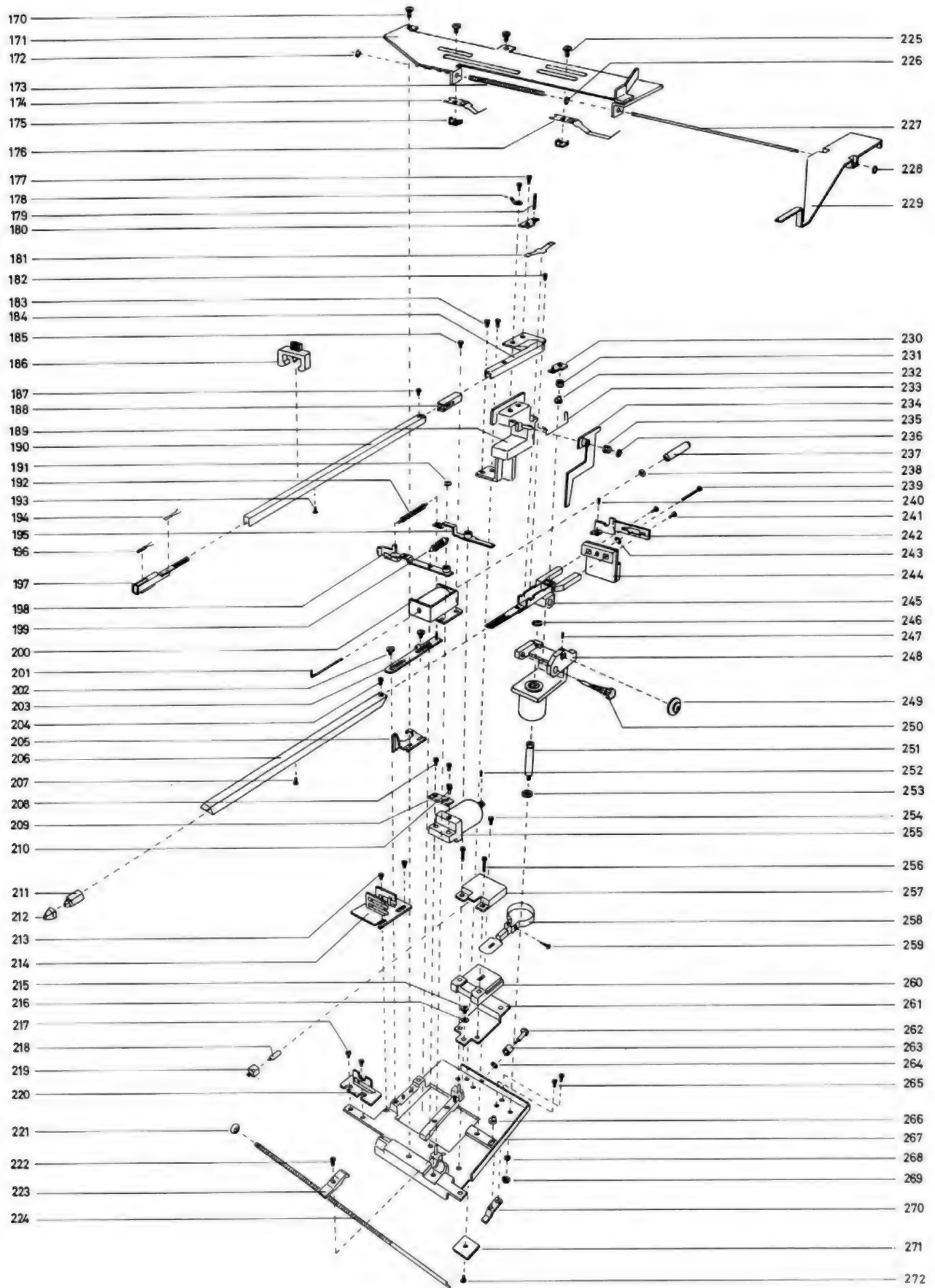
Leads, pick-up arm

| | | |
|-----|---------------------------|---------|
| 248 | Wire bundle (copper wire) | 6300059 |
|-----|---------------------------|---------|

Arm 234, adjustable



| | | |
|------|--------------|---------|
| 234 | Arm complete | 2851083 |
| 234a | Screw | 2034219 |
| 234b | Spring | 2812065 |

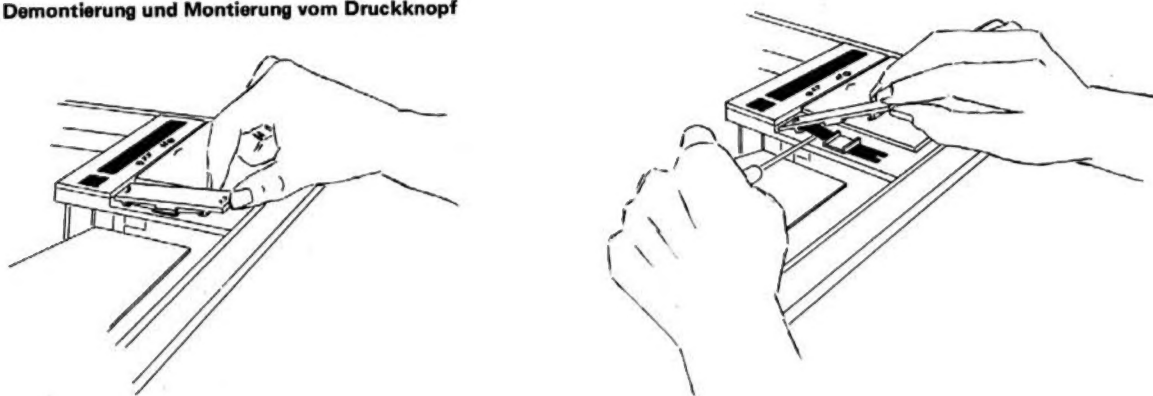


SERVICE TIPS

Demontering og montering af trykknop

Dismounting and mounting of pushbutton

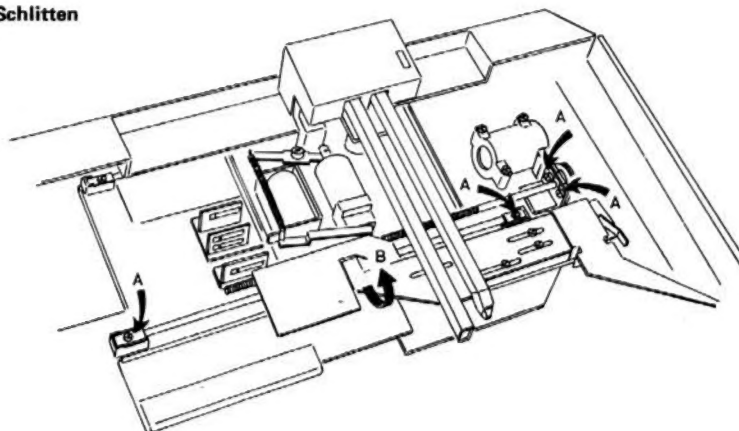
Demontage und Montage vom Druckknopf



Demontering af slæde

Dismounting of slide

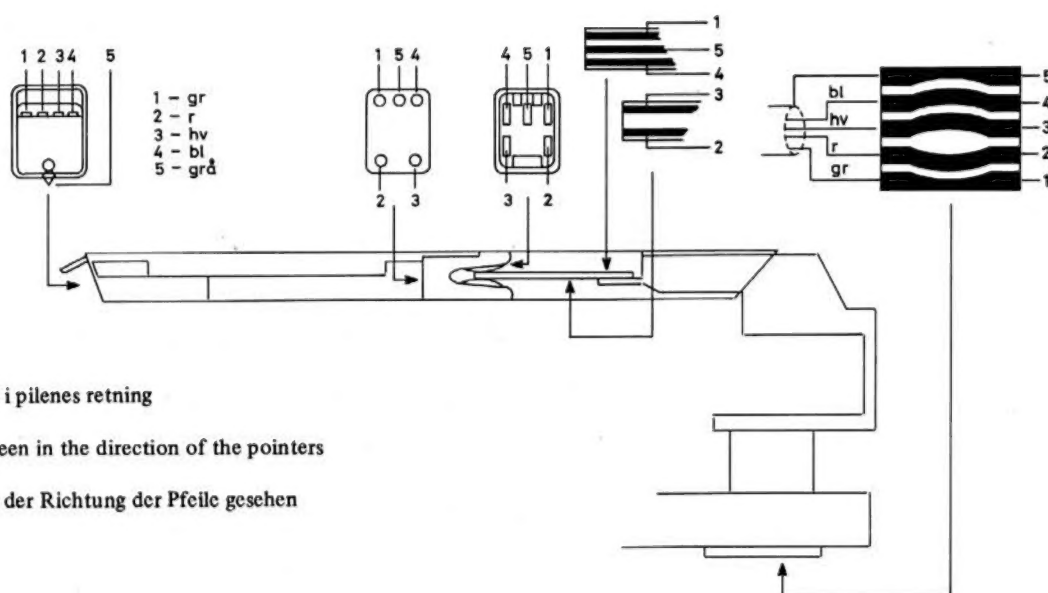
Demontage vom Schlitten



Ledningsmontering i pick-up arm

Mounting of cable in the pick-up arm

Montierung einer Leitung im Tonabnehmerarm



Skitser set i pilenes retning

Sketches seen in the direction of the pointers

Skizzen in der Richtung der Pfeile gesehen



technical information

ISSUE NO. BG1.

GLOUCESTER

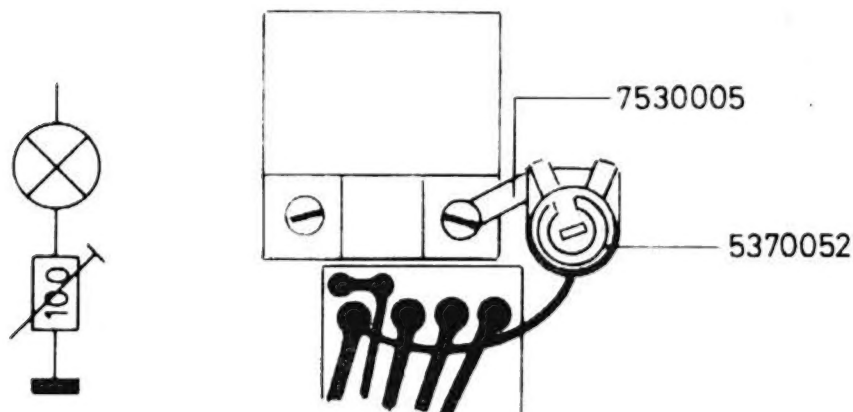
2ND JANUARY 1974

BEOGRAM 4000

Servo system adjustment.

The sensitivity of the servo system corresponding to 15-19 record grooves deviation away from the record centre has until now, been adjusted by pushing the diaphragm up and down, which varies the amount of light falling on the photo resistors. This adjustment has become difficult because of tolerances in the sensitivity of the photo resistors and the light output of the bulb.

In order to overcome this a potentiometer of 100 Ω has been put in series with the lamp OIL1; this adjusts the brightness of the bulb and therefore the sensitivity of the servo system.





technical information

ISSUE NO. BG2.

GLOUCESTER

2ND JANUARY 1974

BEOGRAM 4000 Type 5215

Servo drive belt

Because of difficulties in supply of the original round belt, a triangular belt has been introduced. This gives the following corrections to the parts lists:

| | | | |
|------|-----|--------|---------|
| Pos. | 124 | Pulley | 2722015 |
| Pos. | 125 | Belt | 2732032 |
| Pos. | 136 | Pulley | 2722016 |

When replacing the earlier belt or pulley all three parts mentioned above must be replaced at the same time due to differences in design.

The modification has been introduced in production from S.N. 157700.

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technical information

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6TH MAY, 1974

BEOGRAM 4000 Type 5215

Detector arm circuit

In order to improve the life expectancy of the lamp in the detector arm, a new bulb is used, part number 8230047. Since this lamp has a lower consumption and light output than its predecessor it has been necessary to make minor changes to the BL and DR circuits.

BL circuit

The lower lamp consumption can result in insufficient voltage being developed across 1R30 to operate 1TR12 reliably. Therefore, 1R30 is changed from 15 ohms to 22 ohms, part number 5011004.

DR circuit

Since the new lamp has less intensity it is necessary to remove the 50K potentiometer mounted on the print side of the PW board. This, it will be remembered, was installed to give a measure of control over the sensitivity of the DR circuit for dealing with semi-transparent records and is not shown in the circuit diagram.

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